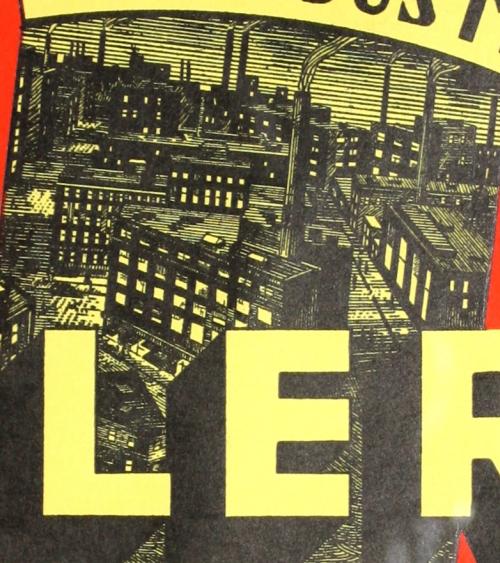


INDOOR  
ANEW PRODUCTION TOOL  
FOR INDUSTRY



MILLER

*Fluorescent*  
LIGHTING FIXTURES

ANHOE

THE MILLER COMPANY  
MERIDEN, CONNECTICUT

Pioneers in Good Lighting since 1844



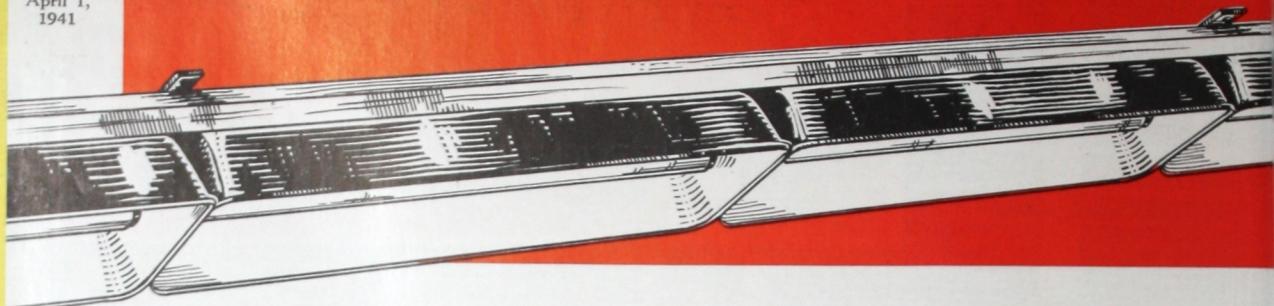
# New IVANHOE “50 FOOT CANDLER”



EVEN ILLUMINATION FROM ONE CONTINUOUS LIGHT SOURCE . . .  
The "50 FOOT CANDLER" gives the "best seeing" light at less cost.  
Here we show three different operations in same work area all  
lighted by the one continuous light source.



*Continuous Wireway* FLUORESCENT LIGHTING SYSTEM  
FOR GENERAL ILLUMINATION OF INDUSTRIAL AREAS



## IVANHOE *Continuous Wireway* FLUORESCENT LIGHTING SYSTEM



MILLER Announces a "Best-Seeing" Light  
of Great Efficiency and Economy . . .

The "50 FOOT CANDLER" is the first RLM continuous wiring channel fluorescent lighting system providing 50 foot candles of general illumination. This is the illumination lighting authorities prescribe for "best-seeing" conditions for most needs. Higher lighting levels, however, can be provided by a scientifically worked out spacing of units as shown in the illumination tables on the back cover of this bulletin.

The "50 FOOT CANDLER" has many noteworthy features which have been engineered into this "best-seeing" lighting equipment. These were developed by Miller engineers with the cooperation of lighting users in diversified fields. These features bring you many lighting benefits. Several of these are detailed in the panel at the right.

**1** The "Best-seeing" light at less cost  
50 foot candles of general illumination secured with average spacing and mounting. Never before practical because of excessive glare and terrific heat. Miller now gives you this level of illumination in a cool light, and at no greater cost (often less cost).



### 2 Modern appearance

Maximum efficiency for general illumination accompanied by fresh, trim appearance. Conforms to latest in plant layout—helps modernize older plants. Crisply clean—helps personnel and public relations.



### 3 30 to 50% lower cost of installation

The "50 FOOT CANDLER" reduces the number of mountings from two (2) for each reflector to an average of one-half (1/2) a support for each reflector—a 75% saving in itself, in holes in concrete, stems or chains to ceiling.

### 4 Reduction up to 80% in users' wiring system

Only one wire entrance required for entire row, reducing number of conduit fittings needed. Line wires can be run in at end or center. All wiring completed on fixtures up to point of connecting to line.

# The "50 FOOT CANDLER"

• • • because of creative engineering, you obtain unusual installation economies, minimum maintenance, and operating expense, and low obsolescence factor.

## 5 Minimum relocation of outlets

In many locations it is necessary to relocate outlets to secure higher levels of illumination. Extra units must be fitted in between existing outlets to bring about a closer spacing. This is not necessary with the "50 FOOT CANDLER" because it has its own wireway. This means only minimum relocation of outlets.



## 6 Simplified maintenance

Smooth-surfaced reflectors, porcelain enameled inside and out, do not readily collect dirt — easy to clean. The reflector can be removed without disturbing wiring for washing, or to get at operating equipment.

## 7 Allowance for future growth-reduced obsolescence

In locations where two light wire channels and reflectors are normally required, reflectors are supplied pierced for three light sockets. Later a third auxiliary and sockets can be installed to increase illumination of the "50 FOOT CANDLER" system as much as 45%.

## 8 Consistent lighting performance

Light properly diffused — absolutely free from glare. Cool, even distribution of daylight illumination over all horizontal and vertical working surfaces. Provides maximum flexibility for moving and relocating machines.

## 9 Easier and quicker installation

Fewer holes to drill in ceiling. No attention need be paid to existing outlets. All operating equipment in wiring channel. Fewer supports required. Adjustable aligning straps keep units straight — simplify hanging.

A lighting profit can be planned in the equipment for production in the user's establishment. That is exactly what Miller has done with the "50 FOOT CANDLER". And the result of Miller's cost-conscious engineering is a "best-seeing" light that can be your "best-paying" lighting investment.

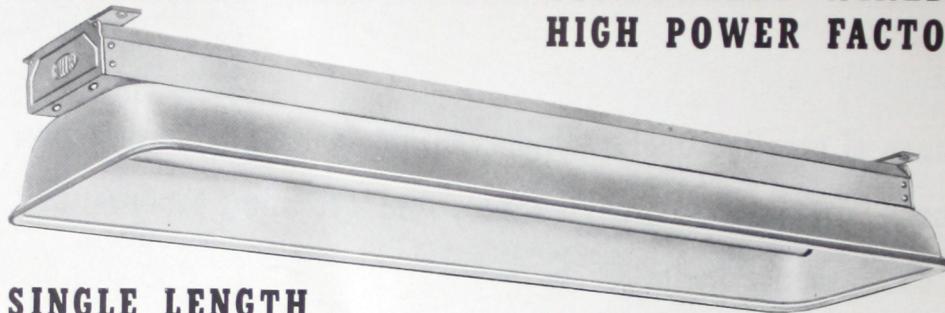
Properly installed, there is no question but what this claim will hold true as it has for a good number of other people now using the "50 FOOT CANDLER" profitably. Their names and savings stories are yours on request.

We believe in these busy times the "50 FOOT CANDLER" can act as a "Fourth Shift" in your factory. Should business accelerate still further, you have a lighting system that is adaptable and mobile. And for years to come, you have a lighting system that won't increase overhead or obsolescence.

At your first opportunity have a Miller lighting engineer make a thorough cost analysis of the "50 FOOT CANDLER" in relation to your present floor space, equipment, personnel, and production problems. There is no obligation for this service.

# Ivanhoe "50 Foot Candy"

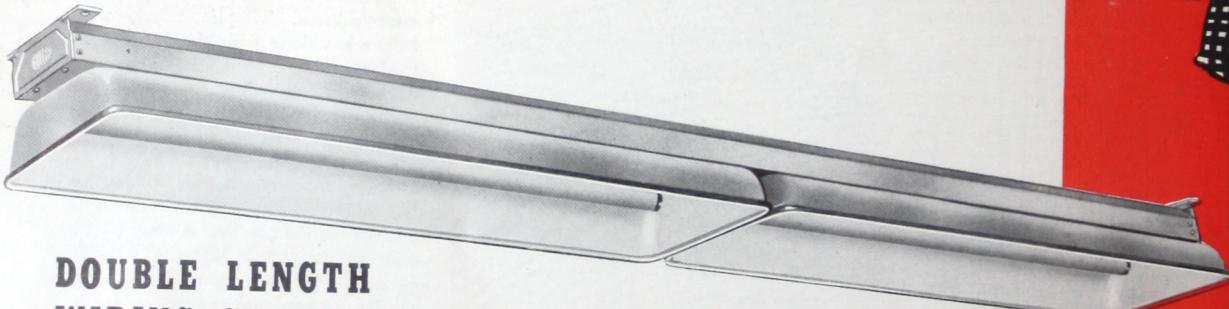
COMPLETELY WIRED..  
HIGH POWER FACTOR



## SINGLE LENGTH

## WIRING CHANNEL

with one RLM reflector. Joins with other single or double length channels to form a continuous line. COMPLETELY WIRED — HIGH POWER FACTOR.



## DOUBLE LENGTH

## WIRING CHANNEL

with two RLM reflectors. Joins with other double or single length channels to form a continuous line. COMPLETELY WIRED — HIGH POWER FACTOR.

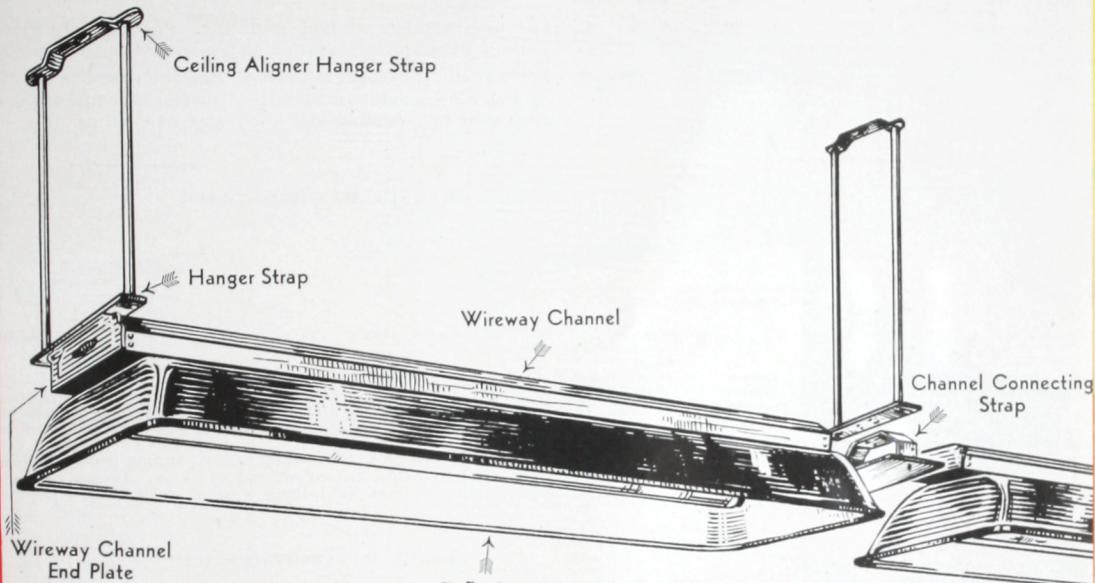
The individual RLM reflectors used with both the single and double length wiring channels have a 13 degree shielding angle from horizontal. They connect to channel easily and quickly. They are constructed of steel, porcelain enameled gray outside

and white inside. They offer maximum reflecting qualities and maximum durability. Each individual reflector with component wiring channel is supplied two ways — for two or three 40-watt Mazda F Fluorescent lamps.



# COMES WITH SINGLE AND DOUBLE LENGTH WIRING CHANNELS

## ITEMS MAKING UP IVANHOE "50 FOOT CANDLER"



Wireway Channel  
End Plate

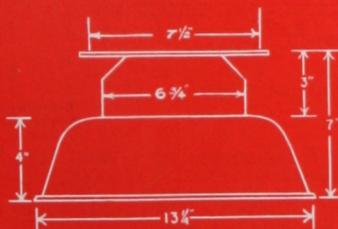
Reflector

Channel Connecting  
Strap



Units may be run in a continuous line close up to ceiling . . . or . . .

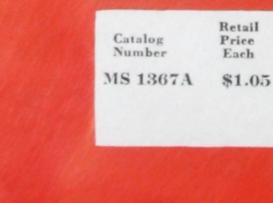
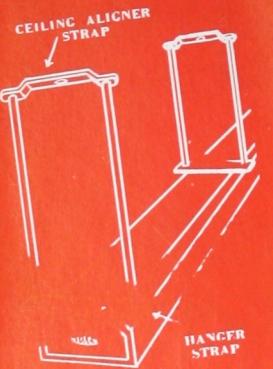
. . . in a continuous line suspended by chain, wire, rod or conduit



**EXCLUSIVE  
FEATURE —**  
reflector completely  
removable — all  
wiring in channels  
makes these units  
easy to get at —  
simple to keep clean  
at all times.



# ITEMS MAKING UP IVANHOE CONTINUOUS "50 FOOT CANDLER"

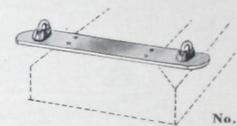


## CEILING ALIGNER STRAPS



Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
H 1589A	\$ .30	B	For use only for pendant mounting. Provides adjustment for ceiling alignment in mounting and eliminates one ceiling hole.	8 oz.
H 1589B	.50	B	For use only for cable mounting. Has two supports for running $\frac{1}{8}$ inch cable lengthwise of units. Provides adjustment for ceiling alignment in mounting and eliminates one ceiling hole.	8 oz.

## CHANNEL HANGER STRAPS



Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
H 1539A	\$ .50	B	One of these hanger straps is required at each end of each channel section for mounting to stem pendants.	1 lb.
H 1647B	1.25	C	This strap assembly is for use in suspending rows of "50 Foot Candlers" by cable instead of rod or chain. It has two supports for running $\frac{1}{8}$ inch cable crosswise of units.	2 lbs.

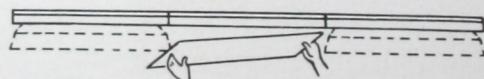
## CHANNEL CONNECTING STRAP

Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
H 1500B	\$1.50	B	This strap is required to join one channel section to another to form a continuous row.	2 lbs.

## WIREWAY CHANNEL END PLATE

Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
H 1542A	\$1.50	B	One is required at each end of a row to enclose channel.	2 lbs.
H 1542B	1.50	B	Same as above with $\frac{3}{4}$ inch knockout.	2 lbs.

## CHANNEL COVER



Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
MS 1367A	\$1.05	C	This stamped steel plate is in a size $52\frac{1}{2}$ inches long and is the same width as the wireway channels. It is used to enclose the wireway channels (H 1533C, H 1534C, H 1534D and H 1534E) that have no electrical equipment. Two of these covers are required for the $105\frac{1}{2}$ inch H 1534E and one for H 1533C, H 1534C and H 1534D, unwired channel sections. Cover is attached by using the two nuts and washers that normally hold reflector in place.	4 lbs.

## WIREWAY CHANNELS

The wireway channels include the high power factor ballast specified, the sockets, starting switches, compensators and wiring connections necessary for complete operation. (Unless otherwise indicated)

Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
<b>H 1533A</b>	<b>\$16.00</b>	<b>B</b>	52 $\frac{1}{4}$ inch length channel for two 40-watt lamps. Takes one reflector and is wired complete with 60 cycle, 110 volt AC Tulamp reactor. Approximate total wattage, 100. Overall power factor of 95-100%.	25 lbs.
<b>H 1533B</b>	<b>22.00</b>	<b>C</b>	52 $\frac{1}{4}$ inch length channel for three 40-watt lamps. Takes one reflector and is wired complete with 60 cycle, 110 volt AC Tulamp and single lamp reactor. Approximate total wattage, 150.	30 lbs.



<b>H 1533C</b>	<b>3.85</b>	<b>C</b>	52 $\frac{1}{4}$ inch length channel without electrical equipment. This is for use in locations where reflectors are spaced 52 $\frac{1}{4}$ inches apart but where no break is desired in wireway channel. It has socket support straps mounted in place and is drilled and tapped for three lamp sockets. Bolts for ballast and starting compensator are also included so that unit can be equipped with sockets, etc., and reflector installed at any future period.	15 lbs.
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<b>H 1534A</b>	<b>35.00</b>	<b>B</b>	105 $\frac{1}{2}$ inch length channel for four 40-watt lamps. Takes two reflectors and is wired complete with two 60 cycle, 110 volt AC Tulamp reactors. Approximate total wattage, 200. Overall power factor of 95-100%.	50 lbs.
<b>H 1534B</b>	<b>47.00</b>	<b>C</b>	105 $\frac{1}{2}$ inch length channel for six 40-watt lamps. Takes two reflectors and is wired complete with three 60 cycle, 110 volt AC Tulamp reactors. Approximate total wattage, 300. Overall power factor of 95-100%.	60 lbs.



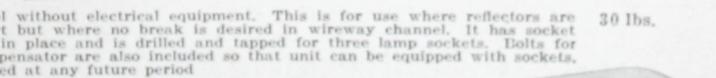
<b>H 1534C</b>	<b>21.25</b>	<b>C</b>	105 $\frac{1}{2}$ inch length channel for two 40-watt lamps. The left hand section of this channel is without electrical equipment but has fittings same as H 1533C for equipping with reflector at any future period. The right hand section is wired complete with 60 cycle, 110 volt AC Tulamp reactor. This arrangement allows for intermittent installation of reflectors but with no breaks in wireway channel. (In indicating the left hand section as being blank, this refers to looking at the channel on a bench with the starter sockets on the left hand side in order to preserve the same position of starter sockets in entire row.)	40 lbs.
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<b>H 1534D</b>	<b>21.25</b>	<b>C</b>	105 $\frac{1}{2}$ inch length channel for two 40-watt lamps. The left hand section of this channel is wired complete with 60 cycle, 110 volt AC Tulamp reactor. The right hand section is without electrical equipment but has fittings same as H 1533C for equipping with reflector at any future period. This arrangement allows for intermittent installation of reflectors but with no breaks in wireway channel. (In indicating the right hand section as being blank, this refers to looking at the channel on a bench with the starter sockets on the right hand side in order to preserve the same position of starter sockets in entire row.)	40 lbs.
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<b>H 1534E</b>	<b>11.50</b>	<b>C</b>	105 $\frac{1}{2}$ inch length channel without electrical equipment. This is for use where reflectors are spaced 105 $\frac{1}{2}$ inches apart but where no break is desired in wireway channel. It has socket support straps mounted in place and is drilled and tapped for three lamp sockets. Bolts for ballast and starting compensator are also included so that unit can be equipped with sockets, etc., and reflector installed at any future period	30 lbs.
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## REFLECTORS

Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
<b>MS 1334A</b>	<b>\$10.50</b>	<b>B</b>	Standard two-lamp reflector, 52 $\frac{1}{2}$ inches long, 13 $\frac{1}{4}$ inches wide, 4 inches deep	15 lbs.
<b>MS 1334B</b>	<b>10.50</b>	<b>C</b>	Standard three-lamp reflector, 52 $\frac{1}{2}$ inches long, 13 $\frac{1}{4}$ inches wide, 4 inches deep	15 lbs.

NOTE: Prices do not cover lamps. While wireway channels come in both 52 $\frac{1}{4}$  and 105 $\frac{1}{2}$  inch lengths, reflectors come only in 52 $\frac{1}{4}$  inch lengths. Two 52 $\frac{1}{4}$  inch reflectors are used with 105 $\frac{1}{2}$  inch channels. All units are bulk packed.

Underwriters' Inspected.

# IVANHOE '50 FOOT CANDLER' FOR GENERAL ILLUMINATION

## ILLUMINATION PERFORMANCE IN VARIOUS SIZE ROOM AREAS

Data given below is based on Mazda White Fluorescent Lamps, rated output 2100 lumens per lamp, 4200 per two-lamp fixture, and 6300 lumens per three-lamp fixture and maintenance factor of .75. Multiply data values by .86 where Daylight Lamps are used. Range covers variation in wall and ceiling finishes of room area.

### 2 LAMP '50 FOOT CANDLER'

Mounting Height-Ft.	5 - 6 1/2				6 1/2 - 8				8 - 10								
	20	28	36	44	20	28	36	44	20	28	36	44	52	60			
Area Per Unit-Sq. Ft.	5	7	9	11	5	7	9	11	13	5	7	9	11	13	15		
Row Spacing - Feet	FOOT CANDLES																
Room	FOOT CANDLES																
Width-Ft. Length-Ft.	FOOT CANDLES																
8-12	8-14	74-66	54-49	41-37	34-30	65-57	47-40	36-32	30-26	25-22	58-49	42-35	32-27	26-22	22-19	19-16	
14-20	80-72	58-51	45-40	37-33	30-26	69-61	49-44	39-34	31-28	27-24	58-49	42-35	32-27	26-22	22-19	19-16	
20-42	86-76	62-55	48-43	39-35	30-26	78-71	56-50	44-39	36-32	31-28	71-62	51-44	39-35	32-28	27-24	24-21	
42-UP	91-82	65-59	51-46	42-38	30-26	85-75	61-54	47-42	39-34	33-29	78-70	55-50	43-39	35-32	30-27	26-23	
12-20	14-20	86-78	62-56	48-44	40-36	78-71	56-50	44-39	36-32	30-27	72-64	52-46	40-36	33-29	28-25	24-22	
20-42	94-85	67-61	52-48	43-39	30-26	86-77	62-55	48-43	39-35	33-30	80-72	57-52	45-40	36-33	31-28	27-24	
42-90	98-91	71-65	55-51	45-42	30-26	93-85	67-61	52-47	42-39	36-33	88-79	63-56	49-44	40-36	34-30	29-26	
90-UP	103-95	74-68	58-53	47-44	30-26	97-90	70-64	54-50	44-41	38-35	93-83	66-59	52-46	42-38	36-32	31-28	
20-50	26-60	107-98	77-71	60-55	49-45	101-94	73-67	57-53	46-43	39-36	96-88	69-63	54-49	44-40	37-34	32-29	
60-90	110-102	79-73	62-57	50-47	106-98	76-70	59-55	48-45	45-41	38	101-93	72-66	56-52	46-42	39-36	34-31	
90-150	111-102	80-73	62-57	51-47	107-99	76-71	60-55	49-45	45-41	38	102-95	73-68	57-53	47-43	39-36	34-32	
150-UP	111-102	89-72	62-57	51-47	107-99	76-71	60-55	49-45	45-41	38	102-95	73-68	57-53	47-43	39-36	34-32	
50-UP	60-90	115-106	83-76	65-60	53-49	115-105	82-75	64-59	59-52	48-44	44-41	112-104	80-74	62-58	51-47	43-40	37-35
90-140	115-106	83-76	65-60	53-49	115-105	82-75	64-59	52-48	44-41	41	112-104	80-74	62-58	51-47	43-40	37-35	
140-200	115-106	83-76	65-60	53-49	115-105	82-75	64-59	52-48	44-41	41	112-104	80-74	62-58	51-47	43-40	37-35	
200-UP	115-106	83-76	65-60	53-49	115-105	82-75	64-59	52-48	44-41	41	112-104	80-74	62-58	51-47	43-40	37-35	

### 3 LAMP '50 FOOT CANDLER'

Mounting Height-Ft.	6 - 8				8 - 10				10 - 12							
	24	32	40	48	24	32	40	48	56	24	32	40	48	56	64	
Area Per Unit-Sq. Ft.	6	8	10	12	6	8	10	12	14	6	8	10	12	14	16	
Row Spacing - Feet	FOOT CANDLES															
Room	FOOT CANDLES															
8-12	8-14	80-69	60-52	48-42	40-35	71-60	53-45	43-36	36-30	31-26	69-58	52-43	42-35	35-29	30-25	26-22
14-20	86-77	64-57	52-46	43-39	71-60	53-45	43-36	36-30	31-26	69-58	52-43	42-35	35-29	30-25	26-22	22-19
20-42	97-87	73-65	59-53	49-44	84-75	63-56	51-54	42-38	36-32	73-62	55-46	44-37	37-31	31-27	28-23	24-21
42-UP	103-92	77-69	62-55	52-46	92-83	69-62	56-50	46-42	40-36	82-73	62-55	50-44	41-37	35-31	31-28	28-25
12-20	97-87	73-65	59-53	49-44	86-77	64-57	52-46	43-39	37-32	75-64	56-48	45-38	38-32	32-27	28-24	24-21
20-42	105-94	78-70	63-57	52-47	97-87	73-65	59-53	49-44	42-37	84-75	63-56	51-45	42-38	36-32	32-28	28-25
42-90	113-99	83-74	68-60	57-50	105-94	79-70	64-57	53-47	45-41	98-87	73-65	59-52	49-44	42-37	37-33	33-30
90-UP	118-108	88-81	73-66	59-55	110-99	83-75	67-60	55-50	48-43	106-95	80-73	65-58	54-48	46-41	40-36	36-32
20-50	125-116	94-87	76-70	63-58	117-108	88-81	71-65	59-54	50-46	108-96	81-72	65-58	54-48	46-41	41-36	36-32
60-90	127-118	95-88	77-71	64-59	119-109	89-82	72-66	60-55	51-47	115-105	86-79	70-64	58-53	50-45	43-40	38-34
90-150	129-120	97-90	78-72	65-60	122-112	91-84	74-68	61-56	52-48	118-109	88-81	71-66	59-55	51-47	44-41	40-37
150-UP	129-120	97-90	78-72	65-60	122-112	91-84	74-68	61-56	52-48	118-109	88-81	71-66	59-55	51-47	44-41	40-37
50-UP	60-90	126-125	102-94	82-76	69-63	134-124	100-92	81-75	67-63	58-54	129-120	97-90	78-72	65-60	56-52	49-45
90-140	128-127	104-95	84-77	70-64	134-124	100-92	81-75	67-63	58-54	131-122	98-91	79-74	66-61	56-52	49-46	45-42
140-200	128-127	104-95	84-77	70-64	134-124	100-92	81-75	67-63	58-54	131-122	98-91	79-74	66-61	56-52	49-46	45-42
200-UP	128-127	104-95	84-77	70-64	134-124	100-92	81-75	67-63	58-54	131-122	98-91	79-74	66-61	56-52	49-46	45-42

<sup>a</sup> Mounting height above working plane.

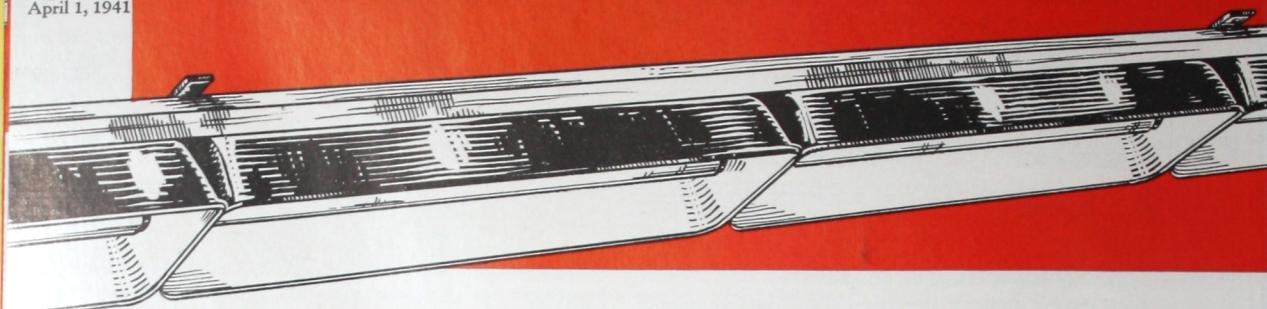
Use of tables for planning installation: Measure room length, width and ceiling height. Determine illumination recommended for nature of the work. Opposite the room dimension and under the mounting height will be found the desired illumination. Above this bracket will be found Area Per Unit And Spacing of continuous rows required for the installation. The spacing-mounting ratio should not exceed 1 1/2 for uniform illumination.

**THE MILLER COMPANY, Meriden, Conn.**  
Pioneers in Good Lighting Since 1844



*New*  
IUANHOE  
**"100 Foot Candler"**

*Continuous Wireway* FLUORESCENT LIGHTING SYSTEM  
FOR GENERAL ILLUMINATION OF INDUSTRIAL AREAS



## IVANHOE *Continuous Wireway* FLUORESCENT LIGHTING SYSTEM



Provides new high levels of illumination in industrial areas requiring higher mounting and wider spacing

**1** The "Best-seeing" light at less cost  
Provides high levels of general illumination in areas requiring wider spacing and higher mounting. The 100 Foot Candler now give you these high levels of illumination in a cool light, and at no greater cost (often less cost).



**2** Modern appearance  
Maximum efficiency for general illumination accompanied by fresh, trim appearance. Conforms to latest in plant layout—helps modernize older plants. Crisply clean—helps personnel and public relations.



**3** 30 to 50% lower cost of installation  
The "100 FOOT CANDLER" reduces the number of mountings from two (2) for each reflector to an average of one-half (1/2) a support for each reflector—a 75% saving in itself, in holes in concrete, stems or chains to ceiling.

**4** Reduction up to 80% in users' wiring system  
Only one wire entrance required for entire row, reducing number of conduit fittings needed. Line wires can be run in at end or center. All wiring completed on fixtures up to point of connecting to line.

Here's a young giant just 'born' to the Miller-Ivanhoe line — the new Ivanhoe Fluorescent "100 FOOT CANDLER". Yes, here is the FIRST RLM CONTINUOUS WIREWAY Fluorescent Lighting System utilizing the 100-watt size Mazda F lamp.

Ivanhoe "100 FOOT CANDLER" is the answer to providing adequate levels of illumination in areas requiring higher mounting and wider spacing of lighting units. It can also be used to provide higher levels of lighting in areas where conventional mounting and spacing is indicated.

This new unit comes both with and without apertures in reflectors. These apertures direct 2 1/2% of the light upwards to relieve ceiling contrast and provide ventilation to insure maximum light output. Other features of this unit are the same as the well-known Ivanhoe "50 FOOT CANDLER" and are detailed in the panels on these two pages.

## The "100 FOOT CANDLER" FOR 60 INCH 100 WATT MAZDA F LAMPS

• • • Miller - Ivanhoe engineering has created an industrial LIGHTING SYSTEM that is an economical and efficient production tool

Never before has industry had such a vital need for better and cooler light. Today the cry is — "speed production!" — "reduce costs!" — "improve working conditions!" The new Ivanhoe Fluorescent "100 FOOT CANDLER" answers this need competently — for men work better, faster, more surely and with less fatigue under its new high level of illumination because they can see what they're doing clearly and sharply.

Because of this fact, Ivanhoe "100 FOOT CANDLER" can actually pay you a production profit. For the net operating cost of this NEW AND BETTER LIGHTING SYSTEM boils down to a fraction of a cent per man-hour in most plants . . . to return increased production measured in dollars!

Miller-Ivanhoe equipment, engineering and 97 years of specialization in the lighting business are your guarantee of INSURED lighting performance. It is from this point a "100 FOOT CANDLER" installation would start in your plant.

### 5 Minimum relocation of outlets

In many locations it is necessary to relocate outlets to secure higher levels of illumination. Extra units must be fitted in between existing outlets to bring about a closer spacing. This is not necessary with the "100 FOOT CANDLER" because it has its own wireway. This means only minimum relocation of outlets.



### 6 Simplified maintenance

Smooth-surfaced reflectors, porcelain enameled inside and out, do not readily collect dirt — easy to clean. The reflector can be removed without disturbing wiring for washing, or to get at operating equipment.

### 7 Consistent lighting performance

Light properly diffused — absolutely free from glare. Cool, even distribution of daylight illumination over all horizontal and vertical working surfaces. Provides maximum flexibility for moving and relocating machines.

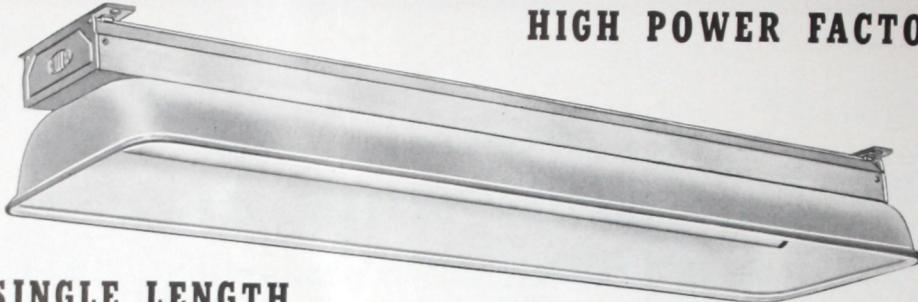
### 8 Easier and quicker installation

Fewer holes to drill in ceiling. No attention need be paid to existing outlets. All operating equipment in wiring channel. Fewer supports required. Adjustable aligning straps keep units straight — simplify hanging.

# Ivanhoe "100 foot Can"

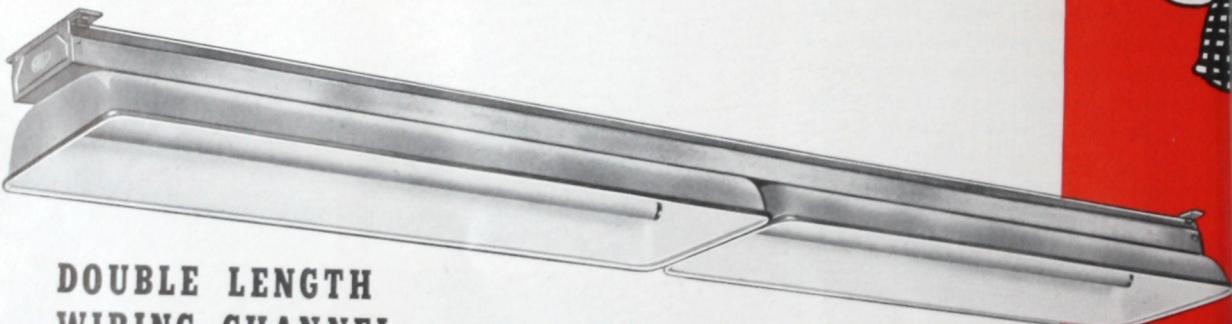
For 60 Inch 100 Watt Mazda F Lamps

COMPLETELY WIRED..  
HIGH POWER FACTOR



## SINGLE LENGTH WIRING CHANNEL

with one RLM reflector. Joins with other single or double length channels to form a continuous line. COMPLETELY WIRED — HIGH POWER FACTOR.



## DOUBLE LENGTH WIRING CHANNEL

with two RLM reflectors. Joins with other double or single length channels to form a continuous line. COMPLETELY WIRED — HIGH POWER FACTOR.

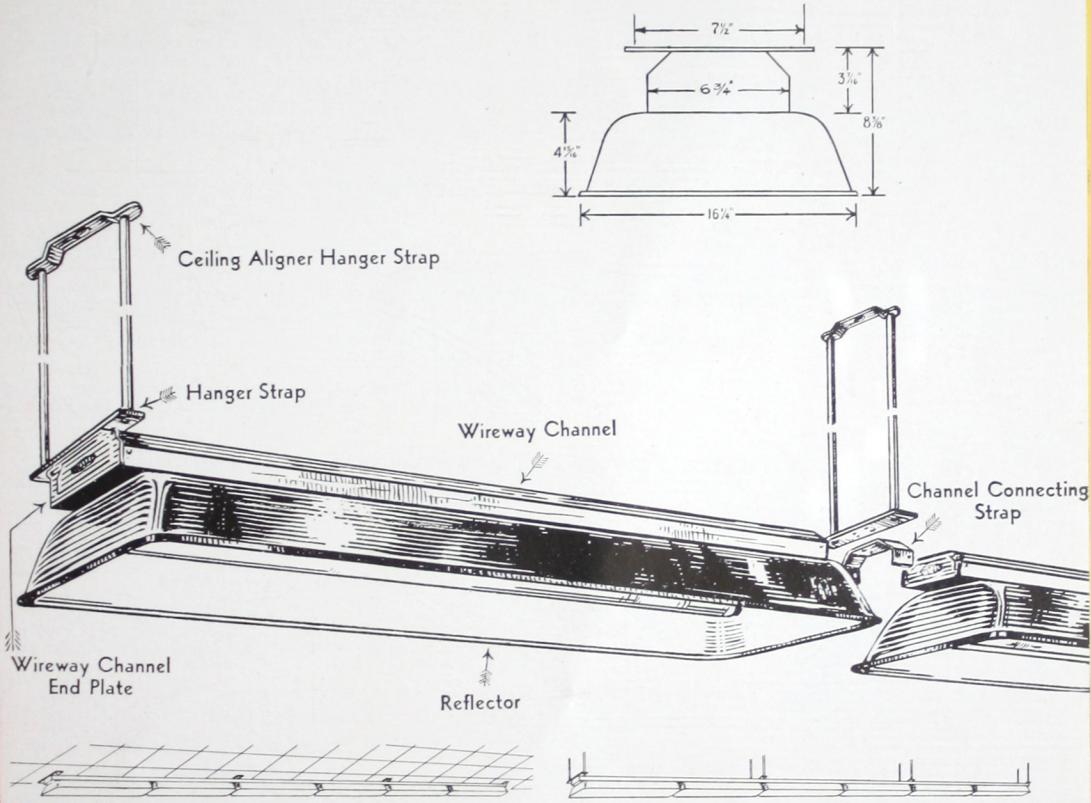
The individual RLM reflectors used with both the single and double length wiring channels have a 14 degree shielding angle from horizontal. They connect to channel easily and quickly. They are constructed of steel, porcelain enameled gray outside and white inside. They offer maximum reflecting qualities and maximum durability.

Each individual reflector is supplied two ways — with apertures and without. The apertures which are located in top of reflector above each lamp permit approximately 2 1/2% of light output to pass upward to the ceiling to relieve contrast and control temperature of lamp to insure maximum light output.



# "COMES WITH SINGLE AND DOUBLE LENGTH WIRING CHANNELS"

## ITEMS MAKING UP IVANHOE "100 FOOT CANDLER"



Units may be run in a continuous line close up to ceiling . . . or . . .

. . . in a continuous line suspended by chain, wire, rod or conduit

**EXCLUSIVE FEATURES** — reflector completely removable — all wiring in channels makes these units easy to get at — simple to keep clean at all times. Renewable starters may be inserted or removed without removing lamp.



**ITEMS MAKING UP  
IVANHOE CONTINUOUS  
"100 FOOT CANDLER"  
For 60 Inch 100 Watt Mazda F Lamps  
CEILING ALIGNER STRAPS**

**CHANNEL HANGER STRAPS**



No. H 1539A



No. H 1647B



No. H 1661A



No. H 1661B



No. H 1662A



No. H 1669A



No. H 1589A



No. H 1589B

Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
H 1589A	\$ .30	B	For use only for pendant mounting. Provides adjustment for ceiling alignment in mounting and eliminates one ceiling hole.	8 oz.
H 1589B	.45	B	For use only for cable mounting. Has two supports for running $\frac{1}{8}$ inch cable lengthwise of units. Provides adjustment for ceiling alignment in mounting and eliminates one ceiling hole.	8 oz.

**CHANNEL HANGER STRAPS**

Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
H 1539A	\$ .35	B	One of these hanger straps is required at each end of each channel section for mounting to stem pendants.	1 lb.
H 1647B	.60	C	This strap assembly is for use at each end of each channel section in suspending rows of "100 Foot Candlers" by cable instead of rod or chain. It has two supports for running $\frac{1}{8}$ inch cable crosswise of units.	2 lbs.
H 1661A	.45	C	Clamps on channel at any point except extreme ends. One is recommended for each channel section for mounting to stem pendants.	2 lbs.
H 1661B	.70	C	Clamps on channel at any point except extreme ends. One is recommended for each channel section for suspending "100 Foot Candlers" by cable instead of rod or chain. It has two supports for running $\frac{1}{8}$ inch cable crosswise of units.	2 lbs.

**CHANNEL CONNECTING STRAP**

Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
H 1662A	\$ .30	B	This strap is required to join one channel section to another to form a continuous row.	2 lbs.

**WIREWAY CHANNEL END PLATE**

Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
H 1669A	\$ .45	B	One is required at each end of a row to enclose channel.	2 lbs.
H 1669C	.50	B	Same as above with $\frac{3}{4}$ inch knockout.	2 lbs.

**CHANNEL COVER**



No. H 1685A

Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
H 1685A	\$1.90	C	This stamped steel plate is in a size $65\frac{1}{4}$ inches long and is the same width as the wireway channels. It is used to enclose the wireway channels (H 1665A, H 1731A, and H 1732A) that have no electrical equipment. Cover is attached by slipping it up inside flange on channel, then tighten knurled head screws on cover to hold in place.	6 lbs.

## WIREWAY CHANNELS

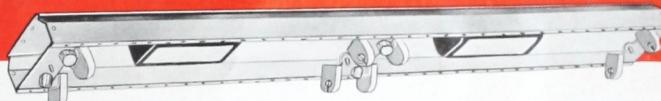
The wireway channels are constructed of 20 gauge steel, finished in baked aluminum. They include the high power factor ballast specified, the sockets, starting switches, compensators and wiring connections necessary for complete operation. (Unless otherwise indicated)



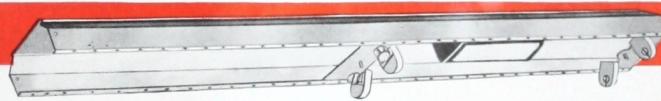
Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
H 1698A	\$25.00	B	66 inch length channel for two 100-watt lamps. Takes one reflector and is wired complete with 60 cycle, 110 volt AC Tulamp reactor. Approximate total wattage, 235. Overall power factor of 95-100%.	30 lbs.



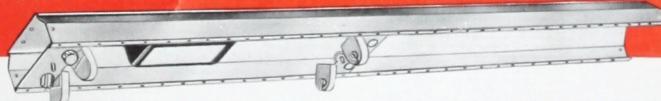
H 1665A	4.25	C	66 inch length channel without electrical equipment. This is for use in locations where reflectors are spaced 66 inches apart but where no break is desired in wireway channel. It has socket support straps mounted in place and is drilled and tapped for two lamp sockets. Bolts for ballast are also included so that unit can be equipped with sockets, etc., and reflector installed at any future period.	18 lbs.
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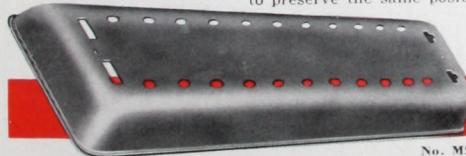
H 1699A	49.50	B	132 inch length channel for four 100-watt lamps. Takes two reflectors and is wired complete with two 60 cycle, 110 volt AC Tulamp reactors. Approximate total wattage, 470. Overall power factor of 95-100%.	60 lbs.
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H 1731A	28.50	C	132 inch length channel for two 100-watt lamps. The left hand section of this channel is without electrical equipment but has fittings same as H 1698A for equipping with reflector at any future period. The right hand section is wired complete with 60 cycle, 110 volt AC Tulamp reactor. This arrangement allows for intermittent installation of reflectors but with no breaks in wireway channel. (In indicating the left hand section as being blank, this refers to looking at the channel on a bench with the starter sockets on the left hand side in order to preserve the same position of starter sockets in entire row.)	45 lbs.
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H 1732A	28.50	C	132 inch length channel for two 100-watt lamps. The left hand section of this channel is wired complete with 60 cycle, 110 volt AC Tulamp reactor. The right hand section is without electrical equipment but has fittings same as H 1698A for equipping with reflector at any future period. This arrangement allows for intermittent installation of reflectors but with no breaks in wireway channel. (In indicating the right hand section as being blank, this refers to looking at the channel on a bench with the starter sockets on the right hand side in order to preserve the same position of starter sockets in entire row.)	45 lbs.
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## REFLECTORS

Catalog Number	Retail Price Each	Delivery Code	Description	Estimated Packed Wt. Each
MS 1339B	\$11.00	B	Two-lamp reflector, 65 1/4 inches long, 16 inches wide, 4 1/8 inches deep	25 lbs.
MS 1339C	11.75	C	Two-lamp reflector with apertures in top above each lamp to direct light upward to relieve ceiling contrast, 65 1/4 inches long, 16 inches wide, 4 1/8 inches deep.	25 lbs.

NOTE: Prices do not cover lamps.  
While wireway channels come in both 66 and 132 inch lengths, reflectors come only in 65 1/4 inch lengths. Two 65 1/4 inch reflectors are used with 132 inch channels.

All units are bulk packed.



No. MS 1339B

# IVANHOE "100 FOOT CANDLER" FOR GENERAL ILLUMINATION

## ILLUMINATION PERFORMANCE IN VARIOUS SIZE ROOM AREAS

Data given below is based on Mazda White Fluorescent Lamps, rated output 4200 lumens per lamp, 8400 per two-lamp fixture, and maintenance factor of .75. Multiply data values by .86 where Daylight Lamps are used. Range covers variation in wall and ceiling finishes of room area.

### 2 LAMP "100 FOOT CANDLER" RLM

Mounting Height-Ft.		8 - 10				10 - 13				14 - 17				
Area per Unit-Sq. Ft.	55	66	77	88	55	66	77	88	99	55	66	77	88	99
Row Spacing - Feet	10	12	14	16	10	12	14	16	18	10	12	14	16	18
Room Width-Ft. / Length-Ft.														
8-12	8-14	41.7-35	34.6-29	29.8-25	26.1-21.8	42-35	35-29	30-25	26-22	23-19	.....	.....	.....	.....
	14-20	46.2-40.5	38.4-33.7	33-29	28.9-25.4	42-35	35-29	30-25	26-22	23-19	.....	.....	.....	.....
	20-42	51.8-46.2	43-38.4	37-33	32.4-29	42-35	35-29	30-25	26-22	23-19	.....	.....	.....	.....
	42-UP	56.3-50.7	46.8-42	40.3-36.2	35.2-31.7	45-38	38-32	33-28	28-24	25-21	42-35	35-29	30-25	26-22
12-20	14-20	54-49	45-40	39-35	34-30	42-35	35-29	30-25	26-22	23-19	42-35	35-29	30-25	26-22
	20-42	59-52	49-43	42-37	37-32	49-43	41-36	35-31	30-28	27-24	43-36	36-30	31-26	27-22
	42-90	64-57	53-48	46-41	40-36	57-51	47-42	41-37	35-32	31-28	47-41	39-34	34-29	29-25
	90-UP	66-60	55-50	48-43	42-37	62-55	52-46	45-40	38-34	34-31	55-50	46-41	40-36	34-31
20-50	30-60	69-63	57-53	50-46	43-39	65-58	54-49	47-42	40-36	36-32	56-51	47-42	41-37	35-32
	60-90	73-67	61-56	53-48	46-42	68-61	56-51	49-44	42-38	37-34	61-55	51-46	44-40	38-34
	90-150	73-67	61-56	53-48	46-42	70-64	58-54	51-46	43-40	39-36	65-59	54-49	47-42	40-36
	150-UP	73-67	61-56	53-48	46-42	70-64	58-54	51-46	43-40	39-36	65-59	54-49	47-42	40-36
50-UP	60-90	81-75	68-63	59-55	50-47	77-71	64-59	55-51	48-44	43-39	71-65	59-55	51-47	44-41
	90-140	81-75	68-63	59-55	50-47	78-72	65-60	56-52	48-45	43-40	75-69	63-58	54-50	47-43
	140-200	81-75	68-63	59-55	50-47	78-72	65-60	56-52	48-45	43-40	75-69	63-58	54-50	47-43
	200-UP	81-75	68-63	59-55	50-47	78-72	65-60	56-52	48-45	43-40	75-69	63-58	54-50	47-43

### 2 LAMP "100 FOOT CANDLER" RLM

Mounting Height-Ft.		18 - 21				22 - 27				28 - 33					
Area per Unit-Sq. Ft.	55	66	77	88	99	55	66	77	88	99	55	66	77	88	99
Row Spacing - Feet	10	12	14	16	18	10	12	14	16	18	10	12	14	16	18
Room Width-Ft. / Length-Ft.															
12-20	14-20	42-35	35-29	30-25	26-22	23-19	42-35	35-29	30-25	26-22	23-19	.....	.....	.....	.....
	20-42	42-35	35-29	30-25	26-22	23-19	42-35	35-29	30-25	26-22	23-19	.....	.....	.....	.....
	42-90	42-35	35-29	30-25	26-22	23-19	42-35	35-29	30-25	26-22	23-19	42-35	35-29	30-25	26-22
	90-UP	48-42	40-35	35-30	30-26	27-23	46-39	38-32	33-28	28-24	25-22	42-35	35-29	30-25	26-22
20-50	30-60	51-45	42-38	37-33	32-28	28-25	48-42	40-35	39-30	36-26	27-23	44-38	37-31	32-27	28-24
	60-90	57-52	48-43	42-37	36-32	32-29	52-46	43-38	37-33	32-29	29-26	46-40	38-33	33-29	29-25
	90-150	60-54	50-45	44-39	37-34	33-30	57-51	48-43	41-37	36-32	32-29	51-46	43-38	37-33	32-28
	150-UP	62-55	52-46	45-40	39-34	34-31	59-52	49-44	42-38	37-33	33-29	54-48	45-40	38-34	34-30
50-UP	60-90	68-61	56-51	49-44	42-38	38-34	64-57	53-48	46-41	40-36	36-32	59-53	49-44	42-38	37-33
	90-140	70-64	58-54	51-45	43-40	39-36	67-60	56-50	48-43	42-38	37-34	64-57	53-48	46-41	40-36
	140-200	73-67	61-56	53-49	45-42	40-37	70-64	58-53	50-46	43-40	39-36	65-58	54-48	46-42	40-36
	200-UP	73-67	61-56	53-49	45-42	40-37	71-65	59-54	51-46	44-41	40-36	66-59	55-49	47-42	41-37

<sup>a</sup>Mounting height above working plane.

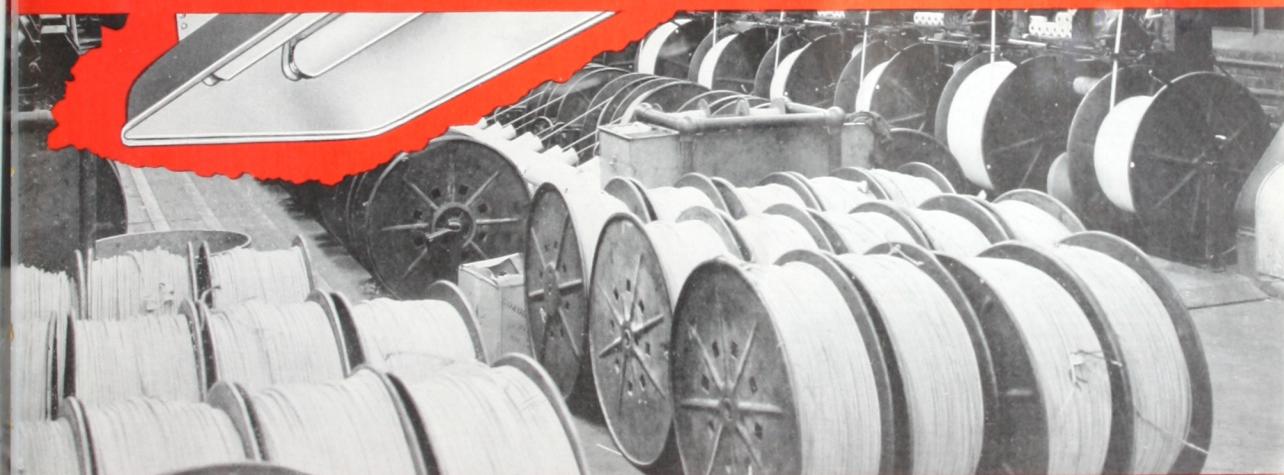
Use of tables for planning installation: Measure room length, width and ceiling height. Determine illumination recommended for nature of the work. Opposite the room dimension and under the mounting height will be found the desired illumination. Above this bracket will be found Area Per Unit And Spacing of continuous rows required for the installation. The spacing mounting ratio should not exceed 1/2 for uniform illumination.

**THE MILLER COMPANY, Meriden, Conn.**  
Pioneers in Good Lighting Since 1844



# VANHOE *Master-Lite*

FOR GENERAL AND LOCALIZED  
INDUSTRIAL ILLUMINATION



**MILLER ENGINEERED FLUORESCENT LIGHTING**

BUILT TO RLM SPECIFICATIONS

**FOR 48 INCH AND 60 INCH MAZDA F LAMPS**

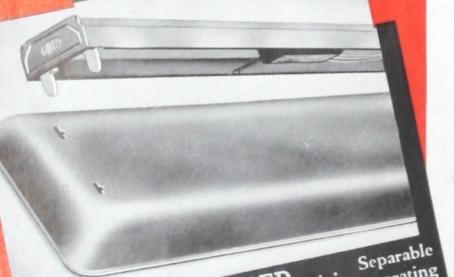


# IVANHOE Master-Lite

**STURDY CONSTRUCTION** . . . Sturdily constructed in accordance with rigid Miller Standards. Reflectors porcelain enameled, inside and out.



**EASY TO INSTALL . . .** Designed for one-man installation. All operating equipment in wiring channel. May be mounted flush to ceiling or suspended.



**COMPLETELY WIRED . . .** Separable wiring channel completely wired with operating auxiliaries, sockets, starters, etc. Easily accessible from below after removing reflector.



**EASY TO CLEAN . . .** The reflector can be completely and CONVENIENTLY removed without disturbing wiring.

A far better general overhead illumination of production areas than has been heretofore available, is provided by the Ivanhoe RLM Fluorescent Master-Lites. These carefully engineered units conform to RLM Standards Specifications. The 48 inch unit is most generally used in areas with average ceiling heights. The 60 inch unit provides adequate levels of lighting in areas requiring higher mounting and wider spacing. It can also be used to provide higher levels of lighting in areas where conventional mounting and spacing is indicated. The 60 inch unit with apertures in reflector above each lamp is referred to as the RLM Diffuser. These apertures direct light upward to the ceiling to relieve contrast and provide ventilation to insure maximum light output.

**BETTER, FASTER PRODUCTION . . .** the cool daylight of MASTER-LITE acts as a stimulus to workers. It enables them to see important details—as in assembling, finishing, color discrimination, etc. — distinctly, quickly, without eye-strain. This insures fewer errors, better work, and increased output.

**REDUCES AIR CONDITIONING COSTS . . .** Because Fluorescent lamps operate 50% cooler than any other type lamp of the same wattage, the MASTER-LITE offers the additional advantage of a marked reduction in air conditioning costs.

**PUTS PLANTS AT MAXIMUM EFFICIENCY . . .** Converts “dead areas” of floor space into valuable

# FOR GENERAL AND LOCALIZED INDUSTRIAL ILLUMINATION

**For 48 inch and 60 inch Mazda F Lamps**

productive space. Increases production efficiency. Provides better working conditions. Gives plants a smarter, more modern appearance. And — with proper Miller engineering counsel — cuts lighting costs. These are the special benefits the IVANHOE MASTER-LITES provide.



**MASTER-LITES** are carefully engineered to RLM Standards specifications and carry the RLM label. Designed for general and localized industrial lighting. Light source is adequately shielded by reflector which has a 13 to 14 degree shielding angle from horizontal, as required by RLM standards specifications. Closed ends further shield lamps from direct view.

**MASTER-LITES** are sturdily constructed in accordance with rigid Miller standards. Durable one-piece steel reflectors are porcelain enameled, inside and out. Finished steel-gray enamel outside — with the highly efficient IVANHOE reflecting white inside which has a reflection factor of 79%.

**MASTER-LITES** are completely wired — have separable wiring channels with operating auxiliaries, sockets, starters, etc. Reflector attaches easily with two screws. When reflector is removed, all wiring is exposed from below. Removable starter switches located in sockets are readily accessible.

**MASTER-LITES** are easy to install. May be mounted flush or suspended. Eyelets in end castings for wire or chain supports. Master-Lites 248 and 348 have two  $1\frac{1}{2}$  inch reinforced knockouts in top on 28 inch centers and Master-Lite 260 has two  $1\frac{1}{2}$  inch knockouts in top on 36 inch centers for use if conduit mounting is desired. A porcelain bushing is supplied for use in one knockout opening to wire for chain mounting.

**MASTER-LITES** have a completely removable, wire-free reflector. Thus, reflector's ease of cleaning becomes a guarantee of maximum lighting efficiency at all times. No temptation of maintenance men to avoid a cleaning chore — a twist of two screws and the reflector is completely free. Can be thoroughly washed and replaced in a jiffy. Reserves may even be carried in stock to insure uninterrupted lighting during cleaning.

# IVANHOE

## Master-Lite

*... Simplifies Installation and Maintenance*

**HAS COMPLETELY WIRED CHANNEL WITH REMOVABLE REFLECTOR . . .**

Eyelets for rod,  
chain or wire sus-  
pension mounting.

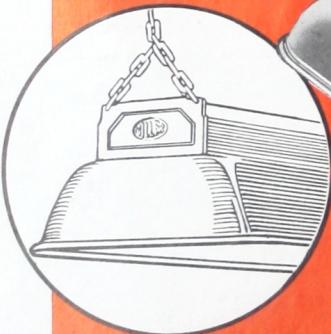
Knock-outs for con-  
duit suspension  
mounting.

Channel of the  
MASTER-LITE is  
completely wired  
with operating aux-  
iliaries, sockets, etc.  
Operating equip-  
ment is easily acces-  
sible from below  
after removing re-  
flector.

Renewable starters  
protrude through  
reflectors. Only a  
slight turn is re-  
quired to insert or  
remove.

Durably constructed  
one-piece reflector  
attaches or de-  
taches from channel  
easily and quickly  
without disturbing  
wiring.

**MASTER-LITE RLM DIFFUSER HAS APERTURES  
IN TOP OF REFLECTOR ABOVE EACH LAMP**



# Master-Lite

## RLM-248

FOR TWO 48 INCH  
40 WATT MAZDA F LAMPS



Underwriters' Inspected

Catalog Number	Retail Price	Delivery Code	Lamp Watts	Line Voltage	Power Factor	Length	Width	Depth	Suspension Fitting	Qty. * 1	Wt. Lbs. 30	STD. PKG. APPROX.
CPEEDD 248-110	\$26.50	B	2-40	110-125	95-100%	52 1/2	13	7 1/4	*	1	30	
CPEEDD 248-220	26.50	B	2-40	220-250	95-100%	52 1/2	13	7 1/4	*	1	30	

PRICES COVER FIXTURES WIRED COMPLETE WITH TULAMP REACTOR AND STARTING COMPENSATOR OPERATING AT POWER FACTOR OF 95% OR ABOVE BUT DO NOT INCLUDE LAMPS.

For 199-216 volt operation, units are supplied on special order. Specify in ordering as CPEEDD 248-208, etc. Approximate total wattage including auxiliaries 100 watts.

\*These units are standard for chain pendant mounting but have two 1/2 inch knockouts for use if conduit mounting is desired. Distance between conduit knockouts is 28 inches. Standard for 60 cycle AC circuits.

### ILLUMINATION PERFORMANCE IN VARIOUS SIZE ROOM AREAS

Data given below is based on White Mazda F Lamps, rated output 2100 lumens per lamp, and maintenance factor of .75. Multiply data values by .86 where Daylight Lamps are used. Range covers variation in wall and ceiling finishes of room area.

Mounting Height-Ft.		5 - 6 1/2				6 1/2 - 8				8 - 10			
Area per Unit-Sq. Ft.	Room	25	50	75	100	25	50	75	100	25	50	75	100
Width-Ft. Lghth.-Ft.													
		F O O T C A N D L E S											
8-12	8-14 14-20 20-42 42-UP	61-54 66-59 72-62 74-67	30-27 33-29 36-31 37-33	20-18 22-20 24-21 25-22	15-14 16-15 18-15 18-17	56-49 61-54 66-59 69-62	28-24 30-27 33-29 35-31	18-16 20-18 22-20 23-21	14-12 15-13 16-15 17-15	47-39 47-39 57-50 62-55	23-20 23-20 29-25 31-28	16-13 16-13 19-17 21-19	12-10 12-10 14-13 16-14
12-20	14-20 20-42 42-90 90-UP	70-63 76-69 79-73 83-77	35-31 38-35 40-36 42-38	23-21 25-23 26-24 28-26	17-16 19-17 20-18 21-19	66-59 72-64 77-70 79-73	33-29 36-32 38-35 40-36	22-20 24-21 26-23 26-24	16-15 18-16 19-17 20-18	58-52 64-58 71-63 74-67	29-26 32-29 35-32 37-33	19-17 21-19 24-21 25-22	14-13 16-14 18-16 19-17
20-50	30-60 60-90 90-150 150-UP	86-79 88-82 89-83 89-83	43-40 44-41 45-42 45-41	29-26 29-27 30-28 30-27	21-20 22-21 22-21 22-20	83-77 85-79 86-79 86-79	42-38 43-39 43-40 43-40	28-26 28-26 29-26 29-26	21-19 21-20 21-20 21-20	78-72 81-75 82-76 82-76	39-36 41-37 41-38 41-38	26-24 27-25 27-25 27-25	20-18 20-19 20-19 20-19
50-UP	60-90 90-140 140-200 200-UP	93-86 93-86 93-86 93-86	47-43 47-43 47-43 47-43	31-29 31-29 31-29 31-29	23-21 23-21 23-21 23-21	92-85 92-85 92-85 92-85	46-42 46-42 46-42 46-42	31-28 31-28 31-28 31-28	23-21 23-21 23-21 23-21	90-83 90-83 90-83 90-83	45-42 45-42 45-42 45-42	30-28 30-28 30-28 30-28	23-21 23-21 23-21 23-21

#### INSTALLATION ON EXISTING OUTLETS

Measure room length, width, ceiling height and area per outlet. Select a mounting height of fixture so the spacing mounting ratio does not exceed 1 1/2. Expected maintained illumination will be found in column of selected mounting height under area per outlet opposite corresponding Room Dimension. Illumination of areas per outlet between those listed can be estimated by comparison with values shown.

#### INSTALLATION ON NEW OUTLETS

Measure room length, width, ceiling height. Determine illumination recommended for nature of work. Select a mounting height suitable for the nature of the work and the desired illumination. Locate the desired illumination opposite the room dimensions under the selected mounting height. This determines the area per outlet. From area per outlet, establish outlet spacing so that spacing mounting ratio does not exceed 1 1/2 for uniform illumination.

\* Mounting height above working plane.

Master-Lite

**RLM-348**

... FOR THREE 48 INCH  
40 WATT MAZDA F LAMPS



**Underwriters' Inspected  
Schedule 1C, F.O.B. Meriden, Conn.**

Catalog Number	Retail Price	Delivery Code	Lamp Watts	Line Voltage	Power Factor	Dimensions-Inches			STD. Qty.	PKG. Wt. Lbs.	Approx. Qty.
						Length	Width	Depth			
<b>CPEDD 348-110</b>	<b>\$34.75</b>	<b>B</b>	<b>3-40</b>	<b>110-125</b>	<b>95-100%</b>	<b>52 1/2</b>	<b>13</b>	<b>7 1/4</b>	<b>*</b>	<b>1</b>	<b>35</b>
<b>CPEDD 348-220</b>	<b>\$33.25</b>	<b>B</b>	<b>3-40</b>	<b>220-250</b>	<b>95-100%</b>	<b>52 1/2</b>	<b>13</b>	<b>7 1/4</b>	<b>*</b>	<b>1</b>	<b>35</b>

PRICES COVER FIXTURES WIRED COMPLETE WITH ONE TULAMP AND ONE SINGLE REACTOR AND STARTING COMPENSATOR OPERATING AT POWER FACTOR OF 95% OR ABOVE BUT DO NOT INCLUDE LAMPS. For 199-216 volt operation, units are supplied on special order. Specify in ordering as CPEDD 348-208, etc. Approximate total wattage including auxiliaries 150 watts.

\* These units are standard for chain pendant mounting but have two  $\frac{1}{2}$  inch knockouts for use if conduit mounting is desired. Distance between conduit knockouts is 28 inches. Standard for 60 cycle AC circuits.

## ILLUMINATION PERFORMANCE IN VARIOUS SIZE ROOM AREAS

Data given below is based on White Mazda F Lamps, rated output 2100 lumens per lamp, and maintenance factor of .75. Multiply data values by .86 where Daylight Lamps are used. Range covers variation in wall and ceiling finishes of room area.

*Mounting Height-Ft.		6 - 8				8 - 10				10 - 12			
Area per Unit-Sq. Ft.		25	50	75	100	25	50	75	100	25	50	75	100
Room		Width-Ft. Lgth.-Ft.											
8-12	8-14	84-74	42-36	27-24	21-18	71-59	35-30	24-20	18-15	67-56	33-27	22-19	17-14
	14-20	92-81	45-41	30-27	23-20	71-59	35-30	24-20	18-15	67-56	33-27	22-19	17-14
	20-42	99-89	50-44	33-30	24-23	86-75	44-38	29-26	21-20	70-60	35-30	23-20	18-15
	42-UP	104-93	53-47	35-32	26-23	93-83	47-42	32-29	24-21	79-70	40-35	26-23	20-18
12-20	14-20	99-89	50-44	33-30	24-23	87-78	44-39	29-26	21-20	72-61	36-31	24-20	18-15
	20-42	108-96	54-48	36-32	27-24	96-87	48-44	32-29	24-21	83-74	42-37	28-25	21-18
	42-90	115-105	57-54	39-35	29-26	107-95	53-48	36-32	27-24	94-84	47-42	31-28	23-21
	90-UP	118-109	60-54	39-36	30-27	111-101	56-50	37-33	29-26	103-92	51-46	34-31	26-23
20-50	30-60	124-115	63-57	42-39	32-29	117-108	59-54	39-36	30-27	104-93	52-46	35-31	26-23
	60-90	127-118	65-59	42-39	32-30	122-113	62-56	41-37	30-29	112-103	56-51	37-34	28-26
	90-150	129-118	65-60	44-39	32-30	123-114	62-57	41-37	30-29	113-104	57-52	38-35	28-26
	150-UP	129-118	65-60	44-39	32-30	123-114	62-57	41-37	30-29	113-104	57-52	38-35	28-26
50-UP	60-90	138-127	69-63	47-42	35-32	135-125	68-63	45-42	35-32	124-115	62-58	41-38	31-29
	90-140	138-127	69-63	47-42	35-32	135-125	68-63	45-42	35-32	126-117	63-58	42-39	31-29
	140-200	138-127	69-63	47-42	35-32	135-125	68-63	45-42	35-32	126-117	63-58	42-39	31-29
	200-UP	138-127	69-63	47-42	35-32	135-125	68-63	45-42	35-32	126-117	63-58	42-39	31-29

## INSTALLATION ON EXISTING OUTLETS

Measure room length, width, ceiling height and area per outlet. Select a mounting height of fixture so the spacing mounting ratio does not exceed  $1\frac{1}{2}$ . Expected maintained illumination will be found in column of selected mounting height under area per outlet opposite corresponding Room Dimension. Illumination of areas per outlet between those listed can be estimated by comparison with values shown.

#### INSTALLATION ON NEW OUTLETS

Measure room length, width, ceiling height. Determine illumination recommended for nature of work. Select a mounting height suitable for the nature of the work and the desired illumination. Locate the desired illumination opposite the room dimensions under the selected mounting height. This determines the area per outlet. From area per outlet, establish outlet spacing so that spacing mounting ratio does not exceed  $1\frac{1}{2}$  for uniform illumination.  
\* Mounting height above working plane.

# Master-Lite

... FOR TWO 60 INCH  
100 WATT  
MAZDA F LAMPS

RLM-260



Underwriters' Inspected

Schedule 1C, F.O.B. Meriden, Conn.

Catalog Number	Retail Price	Delivery Code	Lamp Watts	Line Voltage	Power Factor	Dimensions-Inches			STD. PKG. Qty.	Approx. Wt. Lbs.
						Length	Width	Depth		
CPEDD 260-110	\$43.50	C	2-100	110-125	95-100%	63 1/4	16	8 1/2	*	1 48
CPEDD 260-220	43.50	C	2-100	220-250	95-100%	65 1/4	16	8 1/2	*	1 48

PRICES COVER FIXTURES WIRED COMPLETE WITH TULAMP REACTOR AND STARTING COMPENSATOR OPERATING AT POWER FACTOR OF 95% OR ABOVE BUT DO NOT INCLUDE LAMPS.

For 199-216 volt operation, units are supplied on special order. Specify in ordering as CPEDD 260-208, etc. Approximate total wattage including auxiliaries 235 watts.

\* These units are standard for chain pendant mounting but have two 1/2 inch knockouts for use if conduit mounting is desired. Distance between conduit knockouts is 36 inches. Standard for 60 cycle AC circuits.

## ILLUMINATION PERFORMANCE IN VARIOUS SIZE ROOM AREAS

Data given below is based on White Mazda F Lamps, rated output 4200 lumens per lamp, and maintenance factor of .75. Multiply data values by .86 where Daylight Lamps are used. Range covers variation in wall and ceiling finishes of room area.

*Mounting Height-Ft.		10 - 13				14 - 17				18 - 21					
Area per Unit-Sq. Ft.		50	75	100	125	25	50	75	100	125	25	50	75	100	125
Room															
Width-Ft.	Lghth.-Ft.														
12-20		14-20	45-36	30-24	23-18	18-14	81-62	41-31	27-20	20-15	16-12				
12-20		20-42	53-45	35-30	26-22	21-18	86-66	43-33	28-22	21-16	17-13	81-62	41-31	27-20	20-15
12-20		42-90	58-51	39-34	29-26	24-20	101-81	50-41	33-27	25-20	20-16	90-73	45-36	30-24	23-18
12-20		90-UP	63-54	42-36	31-27	25-22	108-92	54-46	36-31	27-23	22-18	101-81	51-41	34-27	25-20
20-50		30-60	63-54	42-36	31-27	25-22	110-95	55-47	36-31	27-24	22-19	101-81	51-41	34-27	25-20
20-50		60-90	67-60	45-39	33-30	27-24	121-106	60-53	40-35	30-26	24-21	110-95	55-57	36-31	27-24
20-50		90-150	69-63	46-42	35-31	28-25	128-110	64-55	42-36	32-27	26-22	119-103	60-52	39-34	30-26
20-50		150-UP	70-64	47-42	35-32	28-22	130-112	65-56	44-37	32-28	26-22	123-107	62-54	41-35	31-27
50-UP		60-90	74-67	49-45	37-33	30-27	136-123	68-62	45-41	34-31	27-25	131-112	65-56	43-37	32-28
50-UP		90-140	76-68	50-45	38-34	30-27	147-132	74-66	49-44	37-33	30-26	136-123	68-62	45-41	34-31
50-UP		140-200	77-69	51-46	38-35	31-28	147-132	74-66	49-44	37-33	30-26	143-128	71-64	47-42	36-32
50-UP		200-UP	77-69	51-46	38-35	31-28	147-132	74-66	49-44	37-33	30-26	145-129	72-65	47-43	36-32

### INSTALLATION ON EXISTING OUTLETS

Measure room length, width, ceiling height and area per outlet. Select a mounting height of fixture so the spacing mounting ratio does not exceed 1 1/2. Expected maintained illumination will be found in column of selected mounting height under area per outlet opposite corresponding Room Dimension. Illumination of areas per outlet between those listed can be estimated by comparison with values shown.

### INSTALLATION ON NEW OUTLETS

Measure room length, width, ceiling height. Determine illumination recommended for nature of work. Select a mounting height suitable for the nature of the work and the desired illumination. Locate the desired illumination opposite the room dimensions under the selected mounting height. This determines the area per outlet. From area per outlet, establish outlet spacing so that spacing mounting ratio does not exceed 1 1/2 for uniform illumination.

\* Mounting height above working plane.

# Master-Lite

FOR TWO 60 INCH  
100 WATT MAZDA F LAMPS

RLM DIFFUSER  
-260



Underwriters' Inspected  
Schedule 1C, F.O.B. Meriden, Conn.

HAS APERTURES IN TOP OF REFLECTOR ABOVE EACH LAMP

Catalog Number	Retail Price	Delivery Code	Lamp Watts	Line Voltage	Power Factor	Dimensions-Inches			STD. PKG.		
CPEDF 260-110	\$44.50	C	2-100	110-125	95-100%	65 1/4	16	8 1/2	*	1	48
CPEDF 260-220	44.50	C	2-100	220-250	95-100%	65 1/4	16	8 1/2	*	1	48

PRICES COVER FIXTURES WIRED COMPLETE WITH TULAMP REACTOR AND STARTING COMPENSATOR  
OPERATING AT POWER FACTOR OF 95% OR ABOVE BUT DO NOT INCLUDE LAMPS.

For 199-216 volt operation, units are supplied on special order. Specify in ordering as CPEDF 260-208, etc.  
Approximate total wattage including auxiliaries 235 watts.

\* These units are standard for chain pendant mounting but have two 1/2 inch knockouts for use if conduit mounting is desired. Distance between conduit knockouts is 36 inches. Standard for 60 cycle AC circuits.

## ILLUMINATION PERFORMANCE IN VARIOUS SIZE ROOM AREAS

Data given below is based on White Mazda F Lamps, rated output 4200 lumens per lamp, and maintenance factor of .75. Multiply data values by .86 where Daylight Lamps are used. Range covers variation in wall and ceiling finishes

Mounting Height-Ft.	10 - 13				14 - 17				18 - 21					
	50	75	100	125	25	50	75	100	125	25	50	75	100	125
F O O T C A N D L E S														
12-20	14-20	45-56	30-24	23-18	18-14	81-62	41-31	27-20	20-15	16-12	...	...	...	
	20-42	53-45	35-30	26-22	21-18	86-66	43-33	28-22	21-16	17-13	81-62	41-31	27-20	20-15
	42-90	58-51	39-34	29-26	24-20	101-81	50-41	33-27	25-20	20-16	90-73	45-36	30-24	23-18
	90-UP	63-54	42-36	31-27	25-22	108-92	54-46	36-31	27-23	22-18	101-81	51-41	34-27	25-20
20-50	20-60	63-54	42-36	31-27	25-22	110-95	55-47	36-31	27-24	22-19	101-81	51-41	34-27	25-20
	60-90	67-60	45-39	33-30	27-24	121-106	60-53	40-35	30-26	24-21	110-95	55-57	36-31	27-24
	90-150	69-63	46-42	35-31	28-25	128-110	64-55	42-36	32-27	26-22	119-103	60-52	39-34	30-26
	150-UP	70-64	47-42	35-32	28-24	130-112	65-56	43-37	32-28	26-22	123-107	62-54	41-35	31-27
50-UP	60-90	74-67	49-45	37-33	30-27	136-123	68-62	45-41	34-31	27-25	131-112	65-56	43-37	32-28
	90-140	76-68	50-45	38-34	30-27	147-132	74-66	49-44	37-33	30-26	136-123	68-62	45-41	34-31
	140-200	77-69	51-46	38-35	31-28	147-132	74-66	49-44	37-33	30-26	143-128	71-64	47-42	36-32
	200-UP	77-69	51-46	38-35	31-28	147-132	74-66	49-44	37-33	30-26	145-129	72-65	47-43	36-32

### INSTALLATION ON EXISTING OUTLETS

Measure room length, width, ceiling height and area per outlet. Select a mounting height of fixture so the spacing mounting ratio does not exceed 1 1/2. Expected maintained illumination will be found in column of selected mounting height under area per outlet opposite corresponding Room Dimension. Illumination of areas per outlet between those listed can be estimated by comparison with values shown.

### INSTALLATION ON NEW OUTLETS

Measure room length, width, ceiling height. Determine illumination recommended for nature of work. Select a mounting height suitable for the nature of the work and the desired illumination. Locate the desired illumination per outlet, establish outlet spacing so that spacing mounting ratio does not exceed 1 1/2 for uniform illumination.

\* Mounting height above working plane.

**THE MILLER COMPANY, Meriden, Conn.**

# For Better General Illumination

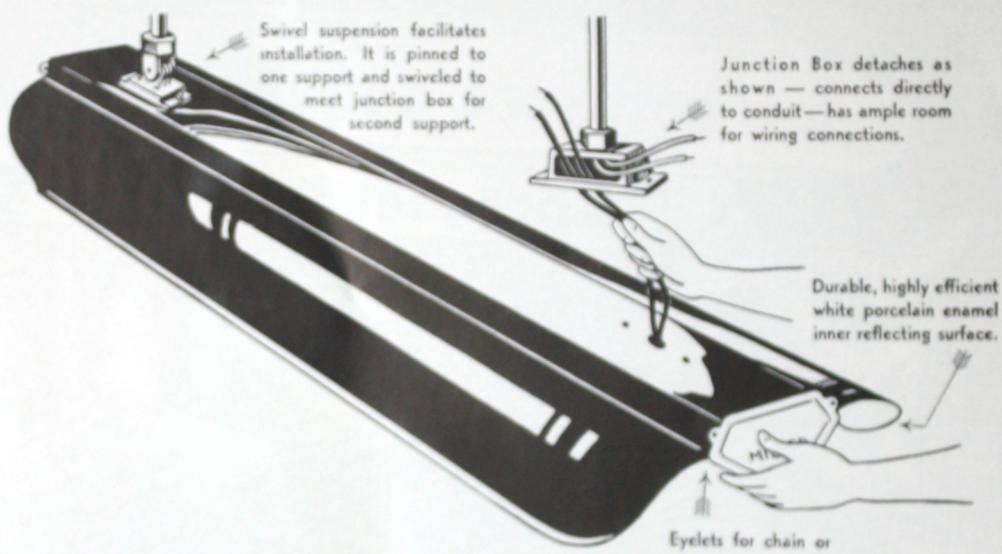
...low cost cool daylight  
fluorescent lighting...



With the **IVANHOE**  
**Super-Lite**

# IVANHOE SUPER-LITE

## EASY TO INSTALL AND MAINTAIN



Ivanhoe Super-Lite provides cool, glareless, color-corrected daylight for the general overhead illumination of production areas where units can be mounted at heights of nine to twelve feet. It is ideal for the lighting of assembly or finishing rooms—for any industrial operation where quick, easy, accurate seeing is vital. Installation is facilitated by means of a swivel and a junction box attached to top of reflector. The junction box provides ample room for making wiring connections. Eyelets at top of the anodized cast aluminum end plates make it possible to suspend unit from wire or chain

supports in place of conduit. Where ordered for chain pendant mounting, the junction box and swivel are eliminated but a bushed wire entrance is provided.

### BENEFITS WORKERS — SPEEDS PRODUCTION

SUPER-LITE uses two 40 watt Fluorescent Mazda F Lamps. Workers will SEE more clearly, quickly, accurately — do their work under its COOL light in greater comfort and with greater zest — production volume will be increased and seconds and rejects reduced to a minimum.

# IVANHOE FLUORESCENT FIXTURE No. 440

FOR THE GENERAL ILLUMINATION OF  
INDUSTRIAL AREAS

For Use with Mazda Daylight or White Fluorescent Lamps  
Has Chains for Hanging and 4 Foot Cord and Plug  
Ready to Plug In



#### CAREFULLY ENGINEERED

This sturdily constructed fixture has been carefully engineered to simplify installation and maintenance. It consists of a durable steel reflector, finished steel gray porcelain enamel outside, and porcelain enameled inside with highly efficient Ivanhoe reflecting white. The steel wiring channel at top of reflector is finished in baked aluminum.

The inner reflector forms a "V" through the center to house and conceal the operating equipment and separate the two 40-watt Fluorescent lamps for maximum efficiency.

Catalog Number	Retail Price	Del. Code	Lamp Watts	Line Voltage	Power Factor	DIMENSIONS-INCHES			STD. PKG.
440	\$19.00	B	2-40	110-125	95-100%	Length	Width	Depth	Suspension Fitting Qty. 1/2 Wt. Lbs. 30

Price covers fixture wired complete, ready to install, with Tulamp Reactor, starting compensators and removable starting switches but do not include lamps. The third wire of the three conductor cord properly grounds this fixture. Operates only on 60 cycle AC circuits.

Underwriters' Inspected



# FOR GENERAL ILLUMINATION

## CAREFULLY ENGINEERED

The sturdily constructed Super-Lite has been carefully engineered to simplify installation and maintenance. It consists of a durable steel reflector, finished steel gray porcelain enamel outside, and porcelain enameled inside with highly efficient Ivanhoe reflecting white. The steel wiring channel at top of reflector is finished in baked aluminum.

The inner reflector forms a "V" through the center to house and conceal the operating equipment and separate the two 40-watt Fluorescent lamps for maximum efficiency.



## CORRECTED FOR POWER FACTOR AND STROBOSCOPIC EFFECT

The Super-Lite operating equipment includes the new high power factor Tulamp reactor, starting compensator and removable starting switches. It has an overall power factor of 95% or above, a minimum of stroboscopic effect (flicker) and the correct starting and operating conditions which insure full-rated life and output of the lamps. Operates only on 60 cycle AC circuits.

## DESIGNED FOR ONE-MAN INSTALLATION

The installation of the SUPER-LITE is facilitated by means of an off-center swivel and a junction box

attached to top of reflector. The swivel separates by removing the swivel pin. This permits the loose part of swivel to be fastened to conduit and unit support by pinning together the swivel. While in this position the junction box can be removed and fastened to the second conduit support. By means of the swivel support, the unit is then brought up to the junction box and securely fastened. The junction box provides ample room for making wiring connections. The wire-way opening of the junction box is closed by a rating plate which gives accurate data of circuit requirements. Eyelets at top of the cast anodized end plates make it possible to suspend unit from wire or chain supports in place of conduit.

### —DIMENSIONS—INCHES—

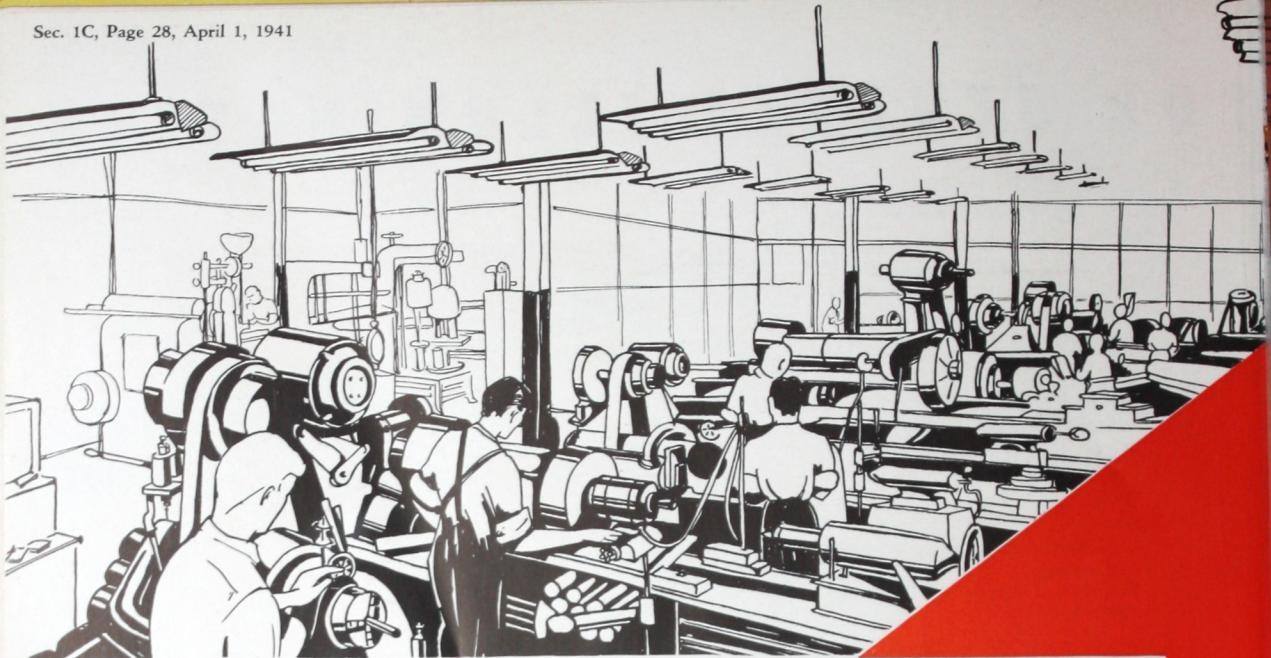
Catalog Number	Retail Price	Del. Code	Lamp Watts	Line Voltage	Power Factor	Length	Width	Depth	Suspension Fitting	STD. Qty.	PKG. Approx.
<b>CONDUIT MOUNTING TYPE</b>											
(Complete with Junction Box for Conduit Mounting)											
<b>PJED 248-110</b>	<b>\$23.00</b>	<b>B</b>	<b>2-40</b>	<b>110-125</b>	<b>95-100%</b>	<b>52</b>	<b>13 3/4</b>	<b>8 3/8</b>	<b>1/2</b>	<b>1</b>	<b>32</b>
<b>PJED 248-220</b>	<b>23.00</b>	<b>B</b>	<b>2-40</b>	<b>220-250</b>	<b>95-100%</b>	<b>52</b>	<b>13 3/4</b>	<b>8 3/8</b>	<b>1/2</b>	<b>1</b>	<b>32</b>
<b>CHAIN PENDANT MOUNTING TYPE</b>											
(Without Junction Box but with a bushed Wire Entrance for Chain Pendant Mounting)											
<b>CPED 248-110</b>	<b>21.25</b>	<b>B</b>	<b>2-40</b>	<b>110-125</b>	<b>95-100%</b>	<b>52</b>	<b>13 3/4</b>	<b>8 3/8</b>	.....	<b>1</b>	<b>32</b>
<b>CPED 248-220</b>	<b>21.25</b>	<b>B</b>	<b>2-40</b>	<b>220-250</b>	<b>95-100%</b>	<b>52</b>	<b>13 3/4</b>	<b>8 3/8</b>	.....	<b>1</b>	<b>32</b>

**PRICES COVER FIXTURES WIRED COMPLETE WITH TULAMP REACTOR AND STARTING COMPENSATOR  
OPERATING AT POWER FACTOR OF 95% OR ABOVE BUT DO NOT INCLUDE LAMPS.**

For 199-216 volt operation units are supplied on special order. Specify in ordering conduit mounting type as PJED 248-208 or chain pendant mounting type as CPED 248-208 etc.

Conduit mounting type is tapped standard for  $\frac{1}{2}$  inch pipe —  $\frac{3}{4}$  inch on request at no additional charge.  
Distance between support mountings, 28 inches.

Underwriters' Inspected



## ILLUMINATION PERFORMANCE IN VARIOUS SIZE ROOM AREAS

Data given below is based on Daylight Mazda F Lamps, rated output 1700 lumens per lamp, 3400 lumens per two-lamp fixture, and maintenance factor of .75. Increase data values by 23% where White Lamps are used. Range covers variation in wall and ceiling finishes of room area.

Mounting Height-Ft.		5 - 6 1/2				6 1/2 - 8				8 - 10				
Area per Unit-Sq. Ft.		25	50	75	100	25	50	75	100	25	50	75	100	
Room		F O O T C A N D L E S												
Width-Ft.	Lgth.-Ft.	8-14	50-42	25-21	17-14	13-10	44-35	22-17	15-12	12- 8	40-29	20-15	14- 9	10- 7
8-12	8-14	14-20	54-45	27-23	18-15	14-12	46-38	23-19	16-13	12- 9	40-29	20-15	14- 9	10- 7
	14-20	20-42	60-51	29-26	20-18	15-13	54-45	27-23	18-15	14-12	44-35	22-17	15-12	12- 8
	20-42	42-UP	63-54	31-27	21-18	16-14	59-49	29-25	20-17	15-13	51-43	26-22	18-15	13-10
	42-UP	14-20	61-52	30-26	20-18	15-13	55-46	27-23	19-16	14-12	48-40	24-20	16-14	13- 9
12-20	14-20	20-42	65-57	32-28	22-19	16-14	61-51	30-26	20-18	15-13	54-45	27-23	18-15	14-12
	20-42	42-90	68-61	34-30	23-20	17-15	64-58	31-28	20-19	16-15	59-49	29-25	20-17	15-13
	42-90	90-UP	70-64	36-31	23-21	18-16	67-60	34-29	22-20	17-15	62-53	30-26	21-18	16-14
	90-UP	30-60	71-65	36-32	24-22	18-16	69-63	35-31	23-21	18-16	63-54	31-27	21-18	16-14
20-50	30-60	60-90	74-67	38-34	25-22	19-17	72-65	37-32	24-22	18-16	66-60	32-29	22-20	17-15
	60-90	90-150	75-68	38-34	25-23	19-17	73-65	37-32	24-22	19-16	69-62	35-30	23-21	18-16
	90-150	150-UP	75-68	38-34	25-23	19-17	73-66	37-32	24-22	19-17	69-62	35-30	23-21	18-16
	150-UP	60-90	77-71	39-36	26-24	20-18	76-70	39-35	25-23	19-18	75-68	38-34	25-23	19-17
50-UP	60-90	90-140	77-71	39-36	26-24	20-18	76-70	39-35	25-23	19-18	75-68	38-34	25-23	19-17
	90-140	140-200	77-71	39-36	26-24	20-18	76-70	39-35	25-23	19-18	75-68	38-34	25-23	19-17
	140-200	200-UP	77-71	39-36	26-24	20-18	76-70	39-35	25-23	19-18	75-68	38-34	25-23	19-17

### INSTALLATION ON EXISTING OUTLETS

Measure room length, width, ceiling height and area per outlet. Select a mounting height of fixture so the spacing mounting ratio does not exceed 1 1/2. Expected maintained illumination will be found in column of selected mounting height under area per outlet opposite corresponding Room Dimension. Illumination of areas per outlet between those listed can be estimated by comparison with values shown.

### INSTALLATION ON NEW OUTLETS

Measure room length, width, ceiling height. Determine illumination recommended for nature of work. Select a mounting height suitable for the nature of the work and the desired illumination. Locate the desired illumination opposite the room dimensions under the selected mounting height. This determines the area per outlet. From area per outlet, establish outlet spacing so that spacing mounting ratio does not exceed 1 1/2 for uniform illumination.

\* Mounting height above working plane.

**THE MILLER COMPANY, Meriden, Conn.**

Pioneers in Good Lighting Since 1844

NEW *Indoor Daylight* FOR INDUSTRY

LOCAL OR LOCALIZED - GENERAL LIGHTING



MILLER

PRESENTS

*fluorescent*  
LIGHTING FIXTURES

IVANHOE

THE MILLER COMPANY • MERIDEN, CONNECTICUT  
Pioneers in Good Lighting Since 1844

# The FINEST DAYLIGHT LAMPS THE WORLD OVER

15-WATT-18"- 1" DIA.

40-WATT-48"- 1½" DIA.

30-WATT-36"- 1" DIA.

20-WATT-24"- 1½" DIA.

The Fluorescent Daylight Mazda lamp is the most remarkable forward step in the important field of Industrial Lighting. "Step" is a very mild word. "Leap" would be more adequately descriptive of this great

**NOTE:** Fluorescent Mazda F lamps are also available in red, gold, pink, blue, green, white and soft w

advance in the science of artificial illumination there is no comparison between this new light and any other so-called DAYLIGHT lamp on the market.

1. Daylight Color.
2. 50% Cooler Light.
3. Greater Efficiency.
4. Low Surface Brightness.
5. No Glare.
6. Longer Life.

## 6 IMPORTANT FEATURES

Fluorescent Mazda lamps are of the electric discharge type, employing Mercury Vapor as the medium for igniting the arc. A large amount of fairly short wave ultra-violet invisible radiation is produced which, in turn, is transformed into longer wave length visible light by means of fluorescent and phosphorescent

powders applied to the inner surface of the glass tube. The remarkable characteristics of Fluorescent Mazda lamps and their exceptionally high efficiency make them especially desirable for a host of applications in the industrial field.

## DIMENSIONS AND ELECTRICAL DATA

	18-inch T-8	24-inch T-12	36-inch T-8	48-inch T-12
Lamp Watts*	15	20	30	40
Lamp Amperes	0.30	0.35	0.34	0.41
Lamp Volts	56	62	103	108
Voltages	110-125	110-125	199-216 220-250 110-125	199-216 220-250 110-125
Uptime, Hrs.	1"	1½"	1"	1½"
	2500	2500	2500	2500

## LUMEN OUTPUTS AND BRIGHTNESSES

Lumens	Foot-Lamberts**	Lumens	Foot-Lamberts**	Lumens	Foot-Lamberts**	Lumens	Foot-Lamberts**
615	2150	900	1650	1450	2475	2100	1750
495	2150	730	1350	1200	2050	1700	1400
435	1750	640	1200	1050	1800	1500	1250
315	1550	460	850	780	1350	.....	.....
900	1125	3200	1300	2400	2250	3900	.....
300	1050	1050	440	800	750	1300	.....
375	1650	1650	540	1000	930	1600	.....
	45	45	60	110	120	210	.....
	160						

auxiliary watts for total.  
num values at center of lamp perpendicular to the lamp. 1 candle/sq. in. = 452 foot-lamberts.

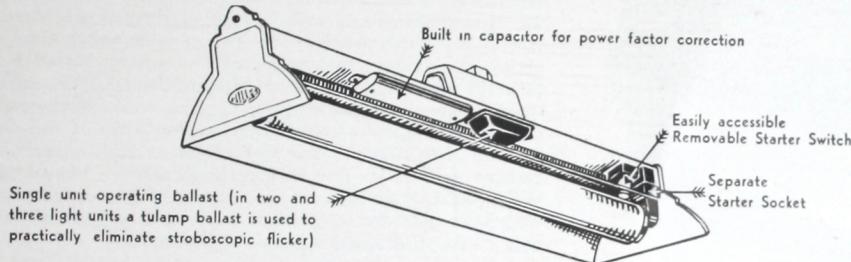
# LIGHT . . . INDOORS

## VER . . . SEEN . . .

### CIRCUIT VOLTAGE

Fluorescent Mazda lamps are designed primarily for operation on AC circuits. Special auxiliary operating equipment is required for each tube.

### POWER FACTOR CORRECTION



A Fluorescent lamp with its auxiliary operating on an AC circuit has a power factor of about 50%: that is, only about 50/100 of the current going through the wiring system does useful work, the rest being returned to the central station. In other words, the characteristics of a Fluorescent lamp with its auxiliary are such

that more current is required in the circuit than is actually consumed, and fully 50/100 of the wiring capacity is needed for this extra current.

Obviously, then, power factor correction is advantageous to the user of Fluorescent lighting. Indeed . . . these advantages are patent:

1. Almost twice as many Fluorescent units can be installed on existing wiring circuits with power factor correction. On circuits already loaded with filament lamps, the level of illumination can be increased as much as 50%. Better lighting without the expense of rewiring!
2. A decrease in voltage drop at the ends of branch circuits results when power factor corrected equipment is used. Another direct saving to the consumer.
3. A reduction in Stroboscopic effect (flicker) where the new Tulamp auxiliary is used is yet another consumer advantage of Fluorescent equipment corrected for power factor.

A capacitor is built in as an integral part of each individual (one and two light) Miller-Ivanhoe Fluorescent unit to correct it for power factor. This equipment permits greatest freedom in installation since each unit is individually power factor corrected — no circuit difficulties. The use of the individual capacitor is further advantageous since the correction is made at the point where the low power factor occurs. In this way, wire capacity, power loss, and line loss are corrected all the way through

the entire wiring system. Thus . . . the user gets better results for less cost.

**IVANHOE FLUORESCENT FIXTURES** with resultant power factor of 90% or above now enable plant owners, simply and relatively inexpensively, to change over from filament to Fluorescent lamps and get more and better light **WITHOUT RE-WIRING** and without the installation of supplementary power factor correcting equipment.

# IVANHOE FLUORESCENT



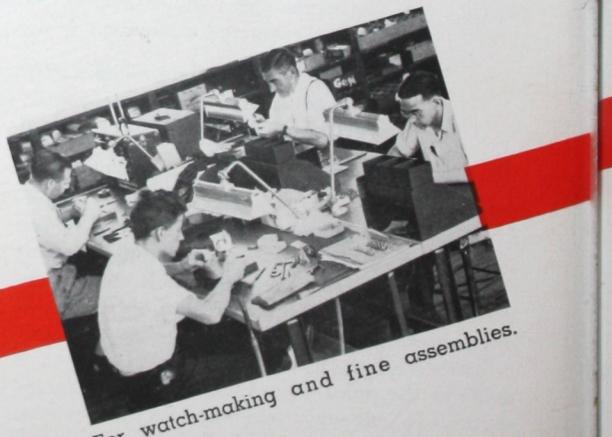
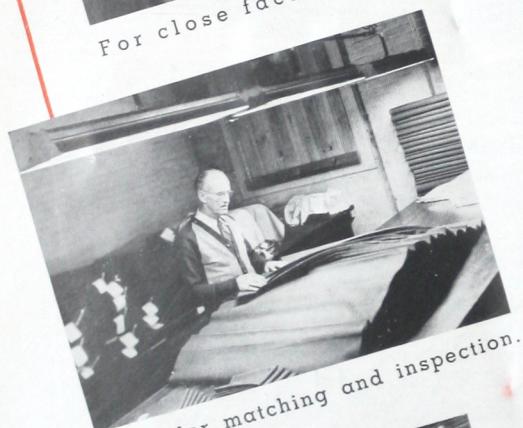
## THE FULL BENEFITS

### FOR LOCAL AND

For very fine assembly and color discrimination and matching, fluorescent lighting is without an equal. Its daylight color, its improved diffusion of light, illuminate minute details with startling distinction — and without the slightest glare. For very close work, the virtual absence of radiant heat in Fluorescent Mazda F light is a vitally important feature. Experiments prove that intensities of several hundred footcandles of Fluorescent Mazda F light can be most advantageously used without the least discomfort in inspection operations and intricate assembly work. Innumerable industrial operations have shown that one or more of the outstanding features of this revolutionary new light — high intensity from low wattage sources — low surface brightness — virtual absence of radiant heat — daylight color — improved even diffusion of light — compactness — are tremendous improvements over all other available forms of localized industrial lighting.

The distinguishing character of localized lighting is, almost invariably that the equipment will be located with strict reference to the particular work to be done. When, however, the working areas are closely spaced, the proper selection of equipment and mounting heights will often provide light suitable for localized general illumination.

Miller-Ivanhoe Fluorescent fixtures were designed with all of the foregoing in mind, by Miller engineers who have behind them the Miller record of nearly 100 years of manufacturing ability and whose work must qualify for the ironclad Miller guarantee of **QUALITY AND COMPLETELY SATISFACTORY SERVICE**. MILLER has always stood for engineered lighting — not merely for the routine making and distribution of good lighting equipment.



# FIXTURES

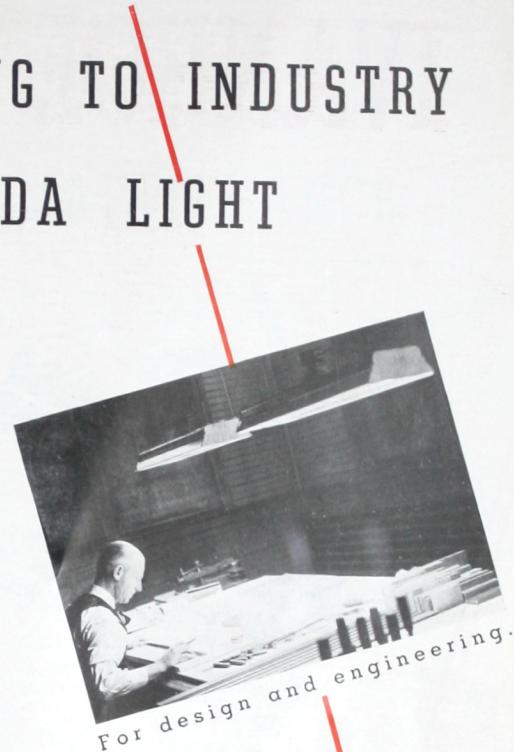
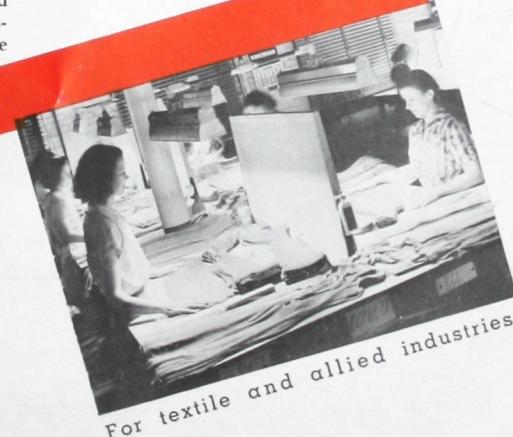
## OF FLUORESCENT MAZDA LIGHT

### BRING TO INDUSTRY

#### LOCALIZED-GENERAL LIGHTING

There are Miller-Ivanhoe Fluorescent fixtures for use where the operator must be very close to the lamp and to his work. And, to fill the need for higher intensities or greater coverage or higher mounting heights above the working level, there are fixtures with varying degrees of concentration and with more than one lamp. Single and double lamp fixtures. In sizes utilizing 15, 20, 30 and 40-watt Fluorescent Mazda F lamps and with either a concentrating or medium spread distribution. All of these fixtures are rigid, compact, sturdy assemblies. The auxiliary operating unit is built into the reflector channel, the bottom of which is completely closed and access is easily gained to it by removing the inner reflector. Separately mounted starter switch of renewable type permits easy, quick replacement without dismantling fixture. Junction box at top of fixture simplifies making wiring connections to the line. The inside reflecting surface of all Ivanhoe localized lighting types of Fluorescent reflectors is of polished non-tarnishing ALZAK aluminum to provide the most positive control of light. In the double Alzak lamp fixtures, each lamp has an individual reflector to insure proper and efficient distribution of light — light from one tube will not pass through an adjacent tube.

On the following pages are shown performance curves and data which will be of practical help in the application of Ivanhoe Fluorescent fixtures to the many purposes for which they are best suited. Note that the light distribution of Alzak units is not symmetrical around the vertical center line of the unit — that is, that a rectangular spread of light is obtained. This fact should be borne in mind when considering the direction of hanging — lengthwise or cross-wise. A careful study of the performance data will indicate the proper arrangement.

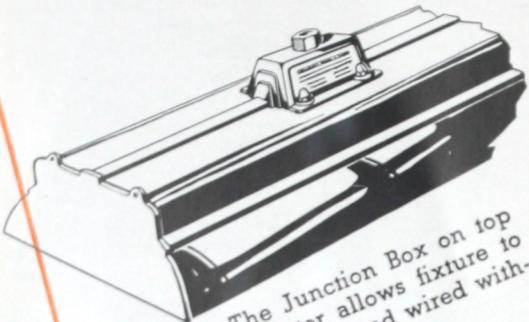


IVANHOE

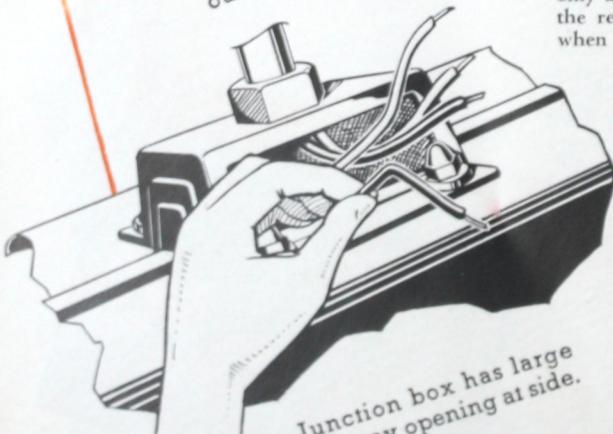
# IVANHOE FLUORESCENT

T O S I M P L I F Y

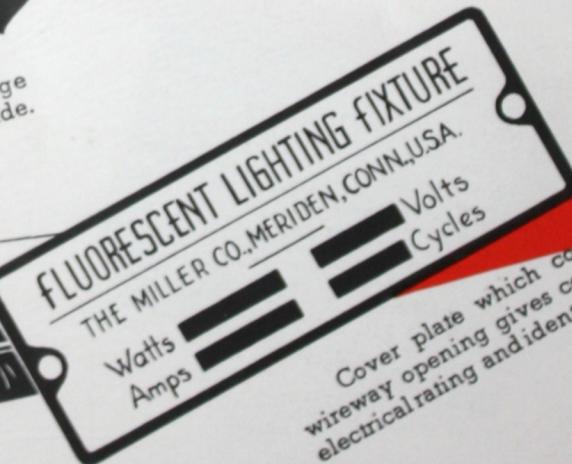
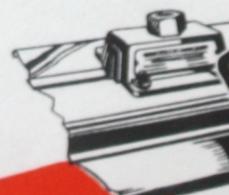
## Junction Box



The Junction Box on top of reflector allows fixture to be mounted and wired without unassembling.



Junction box has large wireway opening at side.



Cover plate which conceals wireway opening gives complete electrical rating and identification.

# FIXTURES

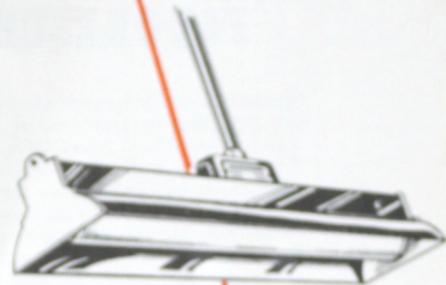
## ARE CONSTRUCTED

### INSTALLATION AND MAINTENANCE

#### Facilitates Wiring

All IVANHOE Fluorescent fixtures are standard for operation on 60 cycle AC circuits and carry the approval of the Underwriters' Laboratories. One and two light Alzak aluminum units are equipped with convenient toggle switch — all units have standard  $\frac{1}{2}$  inch pipe tapping in top for conduit mounting or for attachment of bracket arms, swivels, etc., for a choice of mountings ( $\frac{1}{4}$  inch tapping supplied on request at no additional charge) — and eyelets at top of end castings, which make it possible to suspend unit from wire or chain supports.

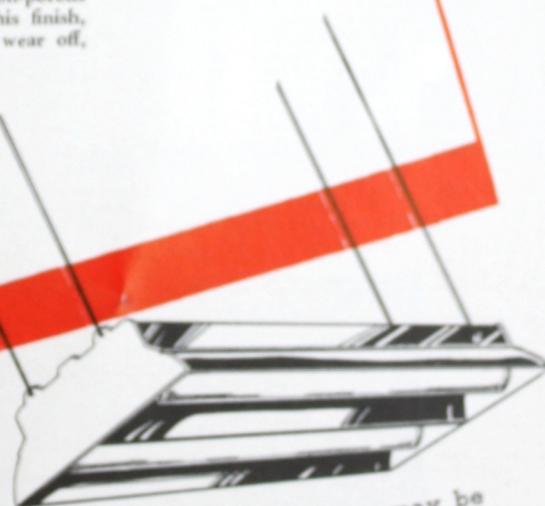
The Alzak aluminum finish that is applied to Ivanhoe Fluorescent reflectors resists grease, dirt, abrasion and corrosion from salt water and moisture. Maintenance costs are lowered for this non-porous surface is easily cleaned with soap and water. With this finish, the reflection factor is permanently high, and will not wear off, tarnish, or stain.



Ivanhoe reflectors mount readily to conduit.

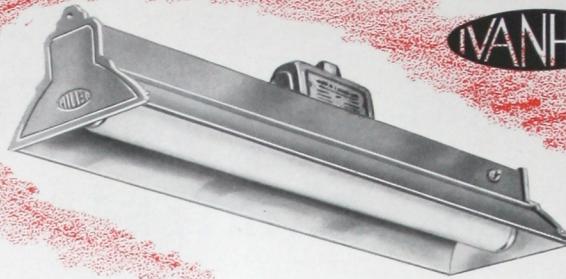


Junction box may be connected directly to conduit where desired, and the reflector may then be attached without rotation—especially desirable in close-to-wall locations.



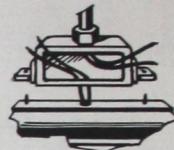
Ivanhoe reflectors may be suspended by chains or wires.

**IVANHOE**



IVANHOE

FOR LOCAL OR LOCALIZED-  
GENERAL LIGHTING



Junction Box  
detaches as shown  
—facilitates wiring

## FLUORESCENT SINGLE TUBE REFLECTOR

### CONCENTRATING TYPE

Specially desirable for spot work application where the operator must be very close to the lamp and to his work — assembly of fine parts, color matching and discrimination and other areas of close work where accuracy is important. May be mounted extremely close to working plane. Can also be mounted in a line along work benches at heights as desired. Inner reflector with surface of polished Alzak aluminum provides positive control of light. At each end of the chromium plated steel outer channel are cast anodized aluminum plates which hold the channel and inner

reflector rigidly, preventing distortion and carry the sockets in a fixed position. Operating auxiliary is housed in channel and access to it is gained by removing inner reflector. Equipped with toggle switch,  $\frac{1}{2}$  inch pipe tapping in top of unit provides for conduit mounting or for the attachment of bracket arms, swivels, etc. Junction box facilitates making wiring connections to the line. Has separately mounted starter switch. Eyelets at top of end castings make it possible to suspend unit from wire or chain supports. Standard for operation on 60 cycle AC circuits.

Catalog Number	Retail Price	**Delivery Code	Lamp Watts	Line Voltage	Power Factor	Length	Width	Depth	Suspension Fitting	STD. Qty.	PKG. Wt. Lbs.
PJAC 18	\$13.25	B	15	110-125	All units	18 $\frac{3}{8}$	5 $\frac{3}{4}$	5 $\frac{1}{4}$	$\frac{1}{2}$	1	7
PJAC 24	14.25	B	20	110-125	power	24 $\frac{3}{8}$	5 $\frac{3}{4}$	5 $\frac{1}{4}$	$\frac{1}{2}$	1	8
PJAC 36-110	20.00	B	30	110-125	factor	36 $\frac{3}{8}$	5 $\frac{3}{4}$	5 $\frac{1}{4}$	$\frac{1}{2}$	1	10
PJAC 36-220	17.00	C	30	220-250	corrected	36 $\frac{3}{8}$	5 $\frac{3}{4}$	5 $\frac{1}{4}$	$\frac{1}{2}$	1	10
PJAC 48-110	24.00	B	40	110-125	to 90%	48 $\frac{3}{8}$	5 $\frac{3}{4}$	5 $\frac{1}{4}$	$\frac{1}{2}$	1	18
PJAC 48-220	22.00	C	40	220-250	or above	48 $\frac{3}{8}$	5 $\frac{3}{4}$	5 $\frac{1}{4}$	$\frac{1}{2}$	1	18

PRICES COVER FIXTURES WIRED COMPLETE WITH AUXILIARIES OPERATING AT 90% MINIMUM POWER FACTOR BUT DO NOT INCLUDE LAMPS.

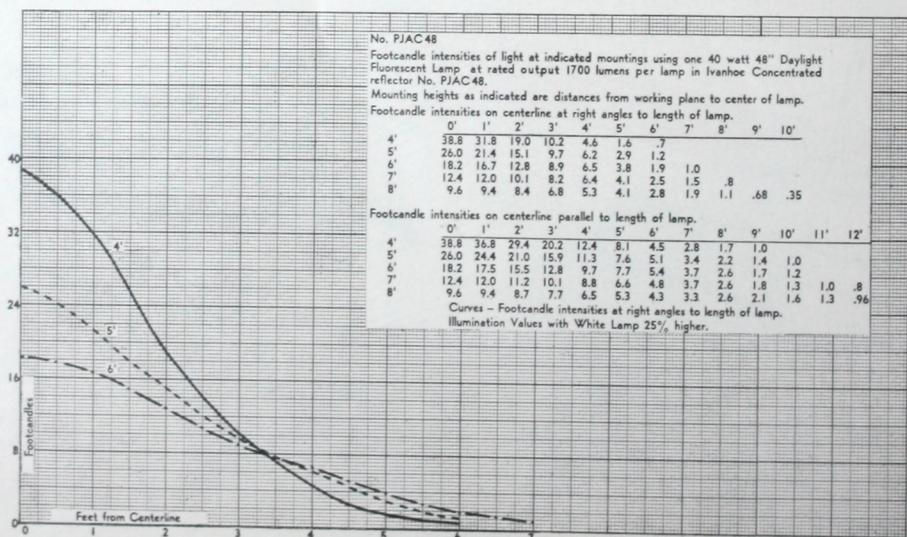
36 and 48 inch units can be supplied on special order for 199-216 volt operation. Specify in ordering as PJAC36-208 etc.

Tapped standard for  $\frac{3}{8}$  inch pipe —  $\frac{3}{4}$  inch on request at no additional charge.

\*48 inch units are supplied standard with two  $\frac{1}{2}$  inch tapped junction boxes spaced on 28 inch centers.

\*\* SUBJECT TO PRIORITY

Underwriters' Inspected

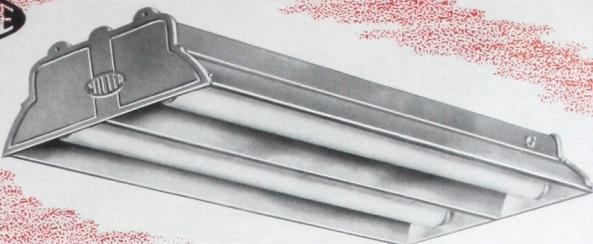


FOR LOCAL OR LOCALIZED-  
GENERAL LIGHTING



Junction Box  
detaches as shown  
—facilitates wiring

IVANHOE



## FLUORESCENT DOUBLE TUBE REFLECTOR CONCENTRATING TYPE

Like the single tube concentrating reflector, this unit is ideal for spot work application. In that it takes two lamps instead of one, it provides greater quantities of high intensity concentrated light for fine assembly operations and color matching and discrimination. Each lamp has an individual reflector to insure proper distribution of light. Can be mounted extremely close to working plane or in a line along work benches at heights as desired. Inner reflectors with surface of polished Alzak aluminum provide positive control of light. At each end of the chromium plated steel outer channel are cast anodized aluminum plates which hold

the channel and inner reflectors rigidly, preventing distortion and carry the sockets in a fixed position. Tulamp operating auxiliary is housed in channel and access to it is gained by removing inner reflectors. Has separately mounted starter switch. Equipped with toggle switch.  $\frac{1}{2}$  inch pipe tapping in top of unit provides for conduit mounting or for the attachment of bracket arms, swivels, etc. Junction box facilitates making wiring connections to the line. Eyelets at top of end castings make it possible to suspend unit from wire or chain supports. Standard for operation on 60 cycle AC circuits.

Catalog Number	Retail Price	**Delivery Code	Lamp Watts	Line Voltage
<b>PJAC218</b>	<b>\$24.00</b>	B	2-15	110-125
<b>PJAC224</b>	<b>26.00</b>	B	2-20	110-125
<b>PJAC 236-110</b>	<b>32.25</b>	B	2-30	110-125
<b>PJAC 236-220</b>	<b>32.25</b>	C	2-30	220-250
<b>PJAC 248-110</b>	<b>41.50</b>	B	2-40	110-125
<b>PJAC 248-220</b>	<b>41.50</b>	C	2-40	220-250

Power Factor	DIMENSIONS-INCHES					Suspension Fitting Qty.	STD. PKG. Wt. Lbs.
	Length	Width	Depth	1/2	1		
All units	18 $\frac{3}{8}$	11 $\frac{3}{4}$	5 $\frac{1}{4}$	1/2	1	11 $\frac{1}{2}$	
power factor	24 $\frac{3}{8}$	11 $\frac{3}{4}$	5 $\frac{1}{4}$	1/2	1	13	
corrected	36 $\frac{3}{8}$	11 $\frac{3}{4}$	5 $\frac{1}{4}$	1/2	1	19	
to 90% of above	48 $\frac{3}{8}$	11 $\frac{3}{4}$	5 $\frac{1}{4}$	* $\frac{1}{2}$	1	24	
	48 $\frac{3}{8}$	11 $\frac{3}{4}$	5 $\frac{1}{4}$	* $\frac{1}{2}$	1	24	

PRICES COVER FIXTURES WIRED COMPLETE WITH TULAMP REACTOR AND STARTING COMPENSATOR OPERATING AT POWER FACTOR OF 90% OR ABOVE BUT DO NOT INCLUDE LAMPS.

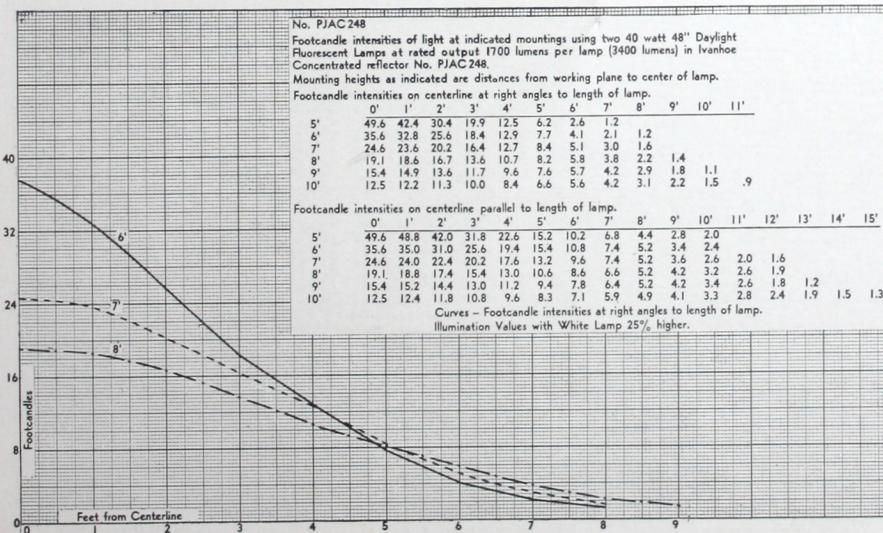
36 and 48 inch units can be supplied on special order for 199-216 volt operation. Specify in ordering as PJAC236-208 etc.

Tapped standard for  $\frac{3}{2}$  inch pipe —  $\frac{3}{4}$  inch on request at no additional charge.

\*48 inch units are supplied standard with two  $\frac{3}{2}$  inch tapped junction boxes spaced on 28 inch centers.

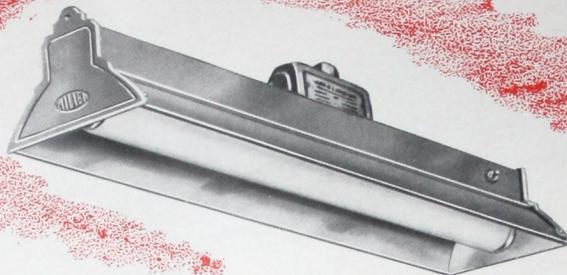
### \*\* SUBJECT TO PRIORITY

Underwriters' Inspected



IVANHOE

FOR LOCAL OR LOCALIZED  
GENERAL LIGHTING



Junction Box  
detaches as shown  
—facilitates wiring

## FLUORESCENT SINGLE TUBE REFLECTOR FLOOD TYPE

Where a broad coverage of high intensity localized light is desired this unit is ideal. Provides a medium spread distribution of light. Highly efficient for a wide range of assembly and inspection operations. May be used in a line along an entire work bench in areas where operators work on both sides. Inner reflector with surface of polished Alzak aluminum provides positive control of light. At each end of the chromium plated steel outer channel are cast anodized aluminum plates which hold the channel and inner reflector rigidly, preventing distortion and carry the

sockets in a fixed position. Operating auxiliary is housed in channel and access to it is gained by removing inner reflector. Equipped with toggle switch.  $\frac{1}{2}$  inch pipe tapping in top of unit provides for conduit mounting or for the attachment of bracket arms, swivels, etc. Junction box facilitates making wiring connections to the line. Has separately mounted starter switch. Eyelets at top of end castings make it possible to suspend unit from wire or chain supports. Standard for operation on 60 cycle AC circuits.

Catalog Number	Retail Price	**Delivery Code	Lamp Watts	Line Voltage	Power Factor	Length	Width	Depth	Suspension Fitting	Qty.	STD. Wt. Lbs.	PKG. Approx.
PJAF 18	\$13.25	B	15	110-125	All units	18 $\frac{3}{8}$	6	5 $\frac{1}{2}$	$\frac{1}{2}$	1	7	
PJAF 24	14.25	B	20	110-125	power	24 $\frac{3}{8}$	6	5 $\frac{1}{2}$	$\frac{1}{2}$	1	8	
PJAF 36-110	20.00	B	30	110-125	factor	36 $\frac{3}{8}$	6	5 $\frac{1}{2}$	$\frac{1}{2}$	1	10	
PJAF 36-220	17.00	C	30	220-250	corrected	36 $\frac{3}{8}$	6	5 $\frac{1}{2}$	$\frac{1}{2}$	1	10	
PJAF 48-110	24.00	B	40	110-125	to 90%	48 $\frac{3}{8}$	6	5 $\frac{1}{2}$	* $\frac{1}{2}$	1	18	
PJAF 48-220	22.00	C	40	220-250	or above	48 $\frac{3}{8}$	6	5 $\frac{1}{2}$	* $\frac{1}{2}$	1	18	

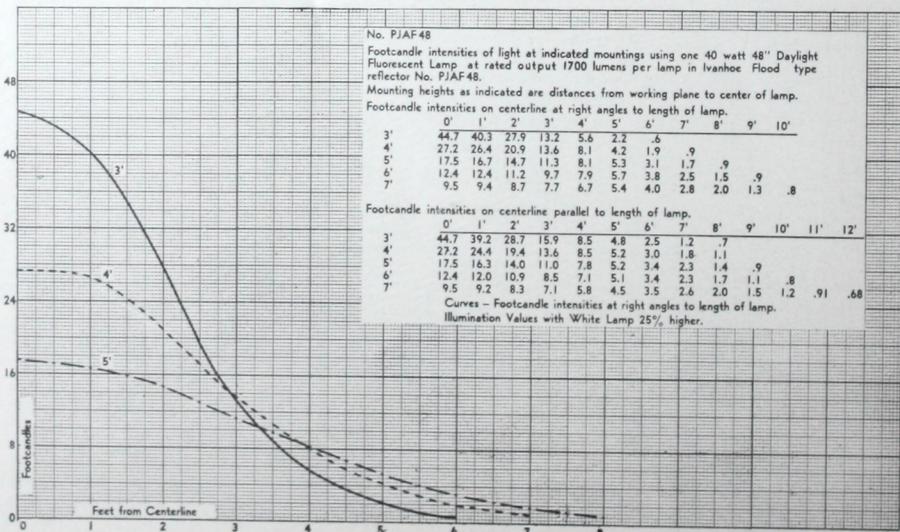
PRICES COVER FIXTURES WIRED COMPLETE WITH AUXILIARIES OPERATING AT 90% MINIMUM POWER FACTOR BUT DO NOT INCLUDE LAMPS.

36 and 48 inch units can be supplied on special order for 199-216 volt operation. Specify in ordering as PJAF 36-208 etc. Tapped standard for  $\frac{1}{2}$  inch pipe —  $\frac{3}{4}$  inch on request at no additional charge.

\*48 inch units are supplied standard with two  $\frac{1}{2}$  inch tapped junction boxes spaced on 28 inch centers.

\*\* SUBJECT TO PRIORITY

Underwriters' Inspected



FOR LOCAL OR LOCALIZED-  
GENERAL LIGHTING



Junction Box  
detaches as shown  
—facilitates wiring

IVANHOE



## FLUORESCENT DOUBLE TUBE REFLECTOR

### FLOOD TYPE

Fills the need for an abundance of high intensity light over a wide working area. At proper mounting heights it even provides light suitable for general illumination. Equipped for use with two lamps, it gives a greater quantity of efficient light ideal for innumerable assembly and inspection operations. Medium spread distribution. Each lamp has an individual reflector to insure proper distribution of light. Inner reflectors with surface of polished Alzak aluminum provide positive control of light. At each end of the chromium plated steel outer channel are cast anodized aluminum plates which hold the channel and inner reflectors rigidly, prevent-

ing distortion and carry the sockets in a fixed position. Tulamp operating auxiliary is housed in channel and access to it is gained by removing inner reflectors. Has separately mounted starter switch. Equipped with toggle switch. 1/2 inch pipe tapping in top of unit provides for conduit mounting or for the attachment of bracket arms, swivels, etc. Junction box facilitates making wiring connections to the line. Eyelets at top of end castings make it possible to suspend unit from wire or chain supports. Standard for operation on 60 cycle AC circuits.

Catalog Number	Retail Price	Delivery Code	Lamp Watts	Line Voltage	Power Factor	DIMENSIONS-INCHES					STD. PKG. Approx.
						Length	Width	Depth	Suspension Fitting	Qty.	
PJAF 218	\$24.00	B	2-15	110-125	All units	18 3/8	12	6	1 1/2	1	11 1/2
PJAF 224	26.00	B	2-20	110-125	power	24 3/8	12	6	1 1/2	1	13
PJAF 236-110	32.25	B	2-30	110-125	factor	36 3/8	12	6	1 1/2	1	19
PJAF 236-220	32.25	C	2-30	220-250	corrected	36 3/8	12	6	1 1/2	1	19
PJAF 248-110	41.50	B	2-40	110-125	to 90%	48 3/8	12	6	* 1 1/2	1	24
PJAF 248-220	41.50	C	2-40	220-250	or above	48 3/8	12	6	* 1 1/2	1	24

PRICES COVER FIXTURES WIRED COMPLETE WITH TULAMP REACTOR AND STARTING COMPENSATOR  
OPERATING AT POWER FACTOR OF 90% OR ABOVE BUT DO NOT INCLUDE LAMPS.

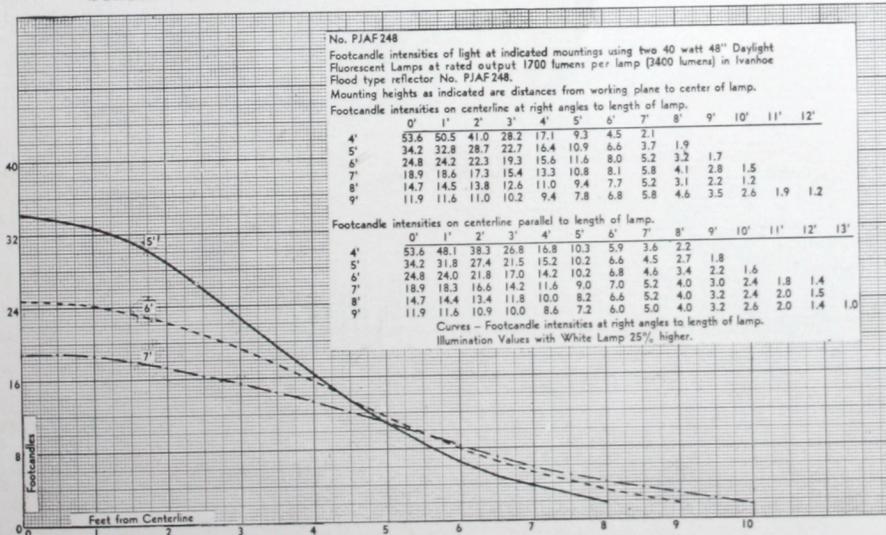
36 and 48 inch units can be supplied on special order for 199-216 volt operation. Specify in ordering as PJAF236-208 etc.

Tapped standard for 1/2 inch pipe — 3/4 inch on request at no additional charge.

\*48 inch units are supplied standard with two 1 1/2 inch tapped junction boxes spaced on 28 inch centers.

\*\* SUBJECT TO PRIORITY

Underwriters' Inspected



# ACCESSORY EQUIPMENT FOR USE WITH

## IVANHOE FLUORESCENT FIXTURES

Catalog Number	Retail Price	Delivery Code	Description	Diam.	Depth	DIMENSION-INCHES	Fitter	STD. PKG. Qty.	APPROX. WT. LBS.
AC 941	\$ .30	B	1/2 Tapped	4 3/4	1 1/4		Outlet Box	10	7
AC 1041	.65	B	1/2 Tapped	4 1/4	1 1/2		Outlet Box	10	7
ACH 1362	1.50	B	Swivel				1/2 male x 1/2 male	10	6
ACH 1363	1.50	B	Swivel				1/2 male x 3/8 female	10	6
ACH 1371	5.75	B	Bench Bracket	4 1/2	19 3/4		1/2 male	5	15
ACH 1621	2.25	C	Has ball joint and 12" stem	5 1/8	14 1/2		1/2 Stud	10	21
ACH 1622	2.65	C	Has ball joint and 18" stem	5 1/8	20 1/2		1/2 Stud	10	28

### PENDANT HANGER ACH 1621 — ACH 1622

The 1/2 inch iron pipe stem is threaded for attaching reflectors and the canopy has knock-out button for Levolor switch. Both the stem and the steel canopy are white porcelain enameled. The cast-iron ball suspended between two plates in the canopy moves freely and allows the fixture to hang plumb when mounted at an angle up to 45 degrees. The canopy is 5 1/8 inches wide and 2 1/2 inches deep to bottom of ball joint and is equipped with heavy slotted cross bar, barrel nuts and screws for attachment to outlet box stud, ears or both.

### OUTLET BOX COVER ALIGNER

AC 941 consists of a cast iron ball, suspended between two plates. The ball moves freely and will allow the fixture to hang plumb when boxes are at an angle up to 45°. The use of this device also improves the efficiency of the installation and protects the reflector or fittings from jars or bumps from poles, ladders, or similar objects. Designed for use on standard 3 1/4 or 4 inch boxes. The ball is tapped for 1/2 inch pipe and has two slots to permit it to be held with a wrench while conduit or pipe is being screwed in place. Standard finish: galvanized iron.



ACH 1621

ACH 1621 (12 in. stem)  
ACH 1622 (18 in. stem)



ACH 1371



AC 1041

ACH 1362  
ACH 1363

### SHOCK ABSORBING OUTLET BOX COVER ALIGNER

The AC 1041 aligner is identical with the AC 941 with the exception that it is of the shock absorbing type. A heavy spring in this device floats the reflector or fitting protecting the equipment from shocks or jars.

### SINGLE-PLANE SWIVEL

By the use of this single-plane swivel, it is possible to tilt Fluorescent fixtures to angles as desired. It may be attached to 1/2" pipe stems or to 3/8" pipe brackets over work bench. Comes in two types—ACH 1362 has 1/2" x 1/2" male fittings and ACH 1363 has 1/2" male x 3/8" female fittings.

### BENCH BRACKET

No. ACH 1371 provides a convenient means of mounting Ivanhoe Fluorescent fixtures to work benches. Arm is adjustable at base and at top swivel which has 1/2 inch male fitting. Extreme height 19 3/4 inches. Base 4 1/2 inches in diameter. Comes complete with wood screws for mounting. Finished in Nuvon.